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A SURVEY OF FUNGOUS DISEASES IN GREAT BRITAIN

RESULTS FROM THE FIRST EIGHTEEN MONTHS

BY

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The new interest manifested in fungous diseases during the last three decades is in some measure a result, but probably in greater measure the cause, of the recent notable advances made in medical mycology, especially in the United States, some South American States, France, and Italy. The study of medical mycology has been neglected by us, but it should not be thought that fungous diseases are less important in Great Britain and the Colonial Empire than in other countries. At the present time little is known of the nature, the incidence, or the gravity of our indigenous or imported systemic mycoses, and much remains to be learned of our common epiphytic infections. Towards the end of 1943 the Committee for Research in Medical Mycology (Medical Research Council) proposed a survey of fungous diseases in Great Britain, and a tentative scheme to collect data was prepared. Pathologists of the Emergency Pathological Service and members of the Pathological Society of Great Britain and Ireland were invited to submit, for mycological examination and identification, morbid specimens or cultures from known, suspected, or possible mycoses, and at a later date a similar invitation was made to readers of the *British Medical Journal* through an annotation (*B.M.J.*, 1944, **2**, 283). The response to these appeals, during the first eighteen months, has been gratifying, and correspondence and specimens were received from 140 pathologists and clinicians—the correspondence bearing evidence of the increasing interest which is being taken in the subject. In all, 1,094 specimens were received, which may be classified as follows: From suspected epiphytic infections, 688; fixed tissues for sectioning, 41; fresh tissues for culture, 42; smears and sections, 130; pus, exudates, and other body fluids, 16; cultures for identification, 62; miscellaneous specimens, including sputum, 115.

As no report of any of the grave systemic mycoses referred to in this paper has yet been published by the doctor concerned, detailed clinical or other descriptions of the cases cannot be given in the following summary.

Mycoses of the Central Nervous System

Torulosis.—Fresh and preserved specimens were received from three cases of torulosis of the central nervous system, in all of which a diagnosis of tuberculosis had been made on the symptoms and clinical signs. In two of these cases torulosis was diagnosed at necropsy, and both showed extensive involvement of the brain and spinal cord and their meninges. In the third case the diagnosis of cerebellar tuberculoma was corrected at operation, and this case is of additional interest because a culture of *Debaryomyces neoformans* (syn. *Torula histolytica*) similar to that isolated from the cerebellar lesion was obtained by nasopharyngeal swabbing, which suggests the possible path of the infection. The cultures from these three cases will be compared with those from earlier English cases and several foreign ones.

Mycotic Meningitis.—Mounted sections were received of the spinal cord and meninges of a case of chronic mycotic spinal meningitis. The causative fungus was present in the greatly thickened pia arachnoid, but in the absence of reproductive forms it could not be identified generically. No culture was available for examination.

Mycotic Cerebral Abscess.—Preserved material was received of a localized abscess of the brain, in the pus of which the mycelium of the causative fungus was present in masses. No reproductive form was found, and in the absence of a culture the generic identity of the fungus could not be determined. The abscess seems to have been secondary to a similar infection in the lung.

Actinomycosis.—Pus from lumbar puncture on a case of cerebrospinal actinomycosis yielded a culture of *Actinomyces bovis* Harz. The meningeal infection seems to have started in the region of the temporal bone, and the disease was rapidly fatal.

Mycoses of the Lung

Pulmonary Moniliasis.—Many specimens of sputum were examined from conditions suspected to be moniliasis of the lung, and from the greater number of these *Candida albicans* (= *Monilia albicans*) was cultivated, but as this pathogenic species is known to vegetate as a saprophyte or a harmless parasite in the throats of healthy persons its mere presence in the sputum is of uncertain diagnostic significance. In one case, however, the *fresh* sputum contained masses of actively vegetating *Candida tropicalis* intimately associated with pulmonary cells: the reported symptoms and physical signs and the *x*-ray picture were consistent with the accepted description of pulmonary moniliasis, and the disease yielded quickly to treatment with potassium iodide. Only a single specimen was available for examination, and it is regrettable that a more complete mycological examination of the case could not be made.

As a precautionary measure against contamination of the sputum by fungi present in the fauces and adjacent cavities, it is a common practice to gargle, wash the mouth, and clean the teeth before expectorating into a sterilized receptacle. This method was used in the controlled examination of the sputum of 32 patients suffering from pulmonary tuberculosis with cavitation. In 68.75% of these patients *Candida albicans* was more or less constantly present in the sputum both before and after mouth-cleansing, and it seems possible that in some of these cases the fungus may have been vegetating saprophytically in the lung cavity; but as bronchoscopic exploration was not feasible in this series of cases the significance of the fungus in the sputum is uncertain. In another group of patients with non-tuberculous cavitation of the lung, on whom bronchoscopic swabbing was allowed, *Candida albicans*, although found in the sputum of some both before and after mouth-cleansing, was never found in the bronchoscopic swabbings. It would seem, therefore, that the method of mouth-cleansing in use is not a safeguard against the contamination of the expectorated matter by fungi vegetating in the mouth and adjacent cavities.

Mould Infections.—The potentially pathogenic mould *Aspergillus fumigatus* was found occasionally in samples of sputum, chiefly from tuberculous patients, but its pathological significance could not be established from examination of the sputum alone. However, in one patient with tuberculous cavitation of

the lung on whom observation was kept over a period of four months the fungus was found more or less constantly in the sputum, whether collected before or after mouth-washing. Towards the end of the period, with the shrinkage and ultimate closure of the lung cavity, the fungus gradually disappeared from the sputum. It seems possible that in this case *A. fumigatus* was vegetating in the lung cavity; but probably as a saprophyte, for the patient's recovery was not retarded. A culture identified as an unusually thermophilic strain of *A. fumigatus* was isolated from the sputum of a unique case of apparent acute aspergillosis of the lungs. Although the patient's state was critical, complete recovery was effected by administration of potassium iodide after sulphonamide therapy had failed. Convincing proof of mycosis in such a case is difficult to obtain, but the clinical signs and symptoms, and the fact that the fungus was present in the sputum in clumps visible to the naked eye and the patient's serum contained precipitating antibodies against antigenic extracts of the fungus, provide strong presumptive evidence of aspergillosis. The case was reported by Delikat (1945). Histological evidence of mould infection of the lung is rare, but sections of lung tissue from two cases were received. In the first of these the gross appearance suggested miliary tuberculosis, but the "tubercles" were formed of colonies of a mould surrounded by the kind of tissue reaction seen in localized mycoses. The patient was a diabetic who died from gastric haemorrhage, and the fungal infection was probably a secondary incident on the favourable diabetic soil. The distribution seemed to be haematogenous, but the primary focus was not known. No doubt, if the patient had survived the haemorrhage he might soon have succumbed to the mycosis. In the second case the patient had died from Hodgkin's disease involving the lung, and sections of the lung tissue showed a mould, similar in appearance to that seen in the first case, vegetating on the walls of the bronchi. In neither case, however, could the species of mould be identified with confidence in the absence of culture.

Farmer's Lung.—Correspondence and several specimens relating to this disabling pulmonary disorder, described by Fawcitt (1936a, 1936b), were received from practitioners and pathologists in Yorkshire, Cumberland, Lancashire, Wales, Lincolnshire, and Devonshire. It is clinically and radiologically a fairly well characterized disease, and is commonly believed to be a kind of pulmonary mycosis. Briefly the usual history is that a farmer, after working continuously for a time with *mouldy* hay from which a steam-like cloud of fungus-laden dust arises, develops a short dry cough with little or no expectoration; he may also suffer from general malaise, weakness, and slight fever, but the outstanding feature is distressing dyspnoea provoked by any physical exertion. The dyspnoea is related to inspiration and not, as in asthma, to expiration. Removal from exposure to mouldy hay dust is followed by rapid recovery, which is usually complete and permanent if further exposure is avoided. If, as almost invariably happens, the farmer returns to work with mouldy hay, all the symptoms of the attack are repeated, but relief can still be obtained if the exposure is discontinued. With successive seasonal recurrences the disease tends to progress to chronicity; the cough becomes more productive, the abundant sputum is tenacious and frothy or purulent, and slight haemoptysis may occur; physical weakness is marked, and so great is the dyspnoea, after even slight exertion, that the man becomes incapacitated for work. It is an incapacitating rather than a fatal disease. At this stage the lung may show fibrosis, emphysema, and possibly bronchiectasis, and the *x*-ray picture is usually characteristic. The relation of farmer's lung to inhalation of mouldy hay dust is unquestioned, but the commonly held view that it is a true pulmonary mycosis is based only on the occupational history of the patient and the cultivation of moulds from his sputum.

Several specimens of sputum from cases of supposed farmer's lung were received from different parts of the country, and mould spores were often found present. From one specimen alone six different species of *Aspergillus* were cultivated, as well as other moulds. There is no doubt that the fungal elements in the sputum represent, in the main, recently inhaled matter, and it is significant that fungal conidia are scarce or absent in the sputum of patients who have been removed for even a short time from exposure to hay dust. The rapid clinical improvement brought about by a change from the dust-laden atmosphere does not suggest a progressive mycosis, and, although evidence from post-mortem examination is rarely obtainable—for the disease does not tend to cause early death—it is noteworthy that the single necropsy in Fawcitt's (1936a) series of cases did not reveal any sign of pulmonary mycosis. Stall-fed cattle are exposed in a much greater degree than farm workers to inhalation of mouldy hay dust, and a study of these animals, from which post-mortem lung material can readily be obtained, may shed some light on the pathology of the disease. In this connexion it is noteworthy that veterinary surgeons believe that "broken wind" of horses, a disorder similar to farmer's lung in its symptomatology, is caused by feeding on mouldy hay, and it can be prevented if the hay is wetted sufficiently to prevent the dust from rising and being inhaled.

Undoubtedly the fungus is an essential factor in the aetiology of farmer's lung, but its role has not been determined:—(*a*) Does it cause a true pulmonary mycosis? (*b*) Does it behave as an allergen? (*c*) Does it produce, in its growth on the hay, some noxious substance which causes the symptoms and pathological changes? (*d*) Does it, by breaking down the hay fibre, produce a sufficiently fine vegetable dust to cause, by inhalation, a disorder analogous to the byssinosis of cotton-mill workers? The suggestion conveyed in the last question seems to be the most plausible, but there is need for research on this disease.

Actinomycosis of the Lung.—The anaerobic species *Actinomyces bovis* was cultivated from the sputum in two cases. In one of these the lesion appeared to be confined to the lung, but in the other case the lung infection, complicated by empyema, was part of a generalized disease which proved rapidly fatal.

Generalized and Other Mycoses

Sporotrichosis.—A case of the localized, ulcero-gummatous type of sporotrichosis affecting the tissues about the left knee-joint, with partial ankylosis of the joint and some rarefaction of the lower end of the femur, was reported from East Anglia. The disease was of eight years' duration, and *Sporotrichum schenckii* was isolated from the specimen of tissue submitted. Another case, also in East Anglia, was diagnosed as generalized sporotrichosis, but material was not received for examination.

Histoplasmosis.—A unique case of histoplasmosis in which the lesions, apparently confined to the skin, simulated annular lupus was identified histologically and by culture. The *Histoplasma* isolated may prove to be a hitherto undescribed species. Recent observations by American mycologists indicate that some of the grave systemic mycoses formerly thought to be relatively rare but essentially fatal may represent only the terminal stages of an unfavourable development in a much more widespread, milder, and unrecognized disease. It seems possible that the apparent sporadic incidence of histoplasmosis may be explainable by some such occurrence; in fact, Palmer (1945), from the results of mass radiography observations combined with the histoplasmin dermal test, has put forward the hypothesis that a non-fatal unrecognized form of histoplasmosis may be common in certain areas in the United States. A fatal case of histoplasmosis in England was identified before this survey was inaugurated.

Blastomycosis.—Stained sections were received of a lesion on the forearm, excised at biopsy, which presented the character and the parasite of blastomycosis of the American type (Gilchrist's disease). The patient, an airman, had contracted the infection abroad.

Torulosis.—From a case of disseminated torulosis with multiple subcutaneous abscesses *Debaryomyces neoformans* was isolated. No history was obtainable, and the patient was soon lost to sight.

Moniliasis.—In addition to the pulmonary conditions already discussed, *Candida albicans* was isolated frequently and *C. tropicalis* once from cases of dermal moniliasis affecting the feet, hands, finger-nails, groin, axilla, and perineum, and from the mucous membranes of the mouth, vagina, and bladder. Of special interest was a case of chronic glossitis with involvement of the lips, of 21 years' duration, in a naval seaman aged 25. The ulcerating and fibrosing lesions, in which *C. albicans* was present in great masses, had caused much deformity

of the mouth and tongue. The same species of *Candida* was isolated from recurrent intertriginous lesions on the patient's feet, groins, and axillae.

Cultures were received of *Candida albicans* from three cases of acute mycotic otitis. The mycosis seems to have been secondary to a staphylococcal otitis media which yielded to local application of penicillin, leaving the hitherto dormant *Candida* to dominate the field. That the mere removal of the staphylococcus may have enabled the fungus to spread and cause an acute mycosis seems possible, but it is noteworthy that Keeney *et al.* (1944) have observed that some fungi which are resistant to penicillin may be stimulated to greater activity by this antibiotic.

Tissue sections were received in connexion with two cases of apparent generalized fatal moniliasis from which *Candida albicans* had been isolated. The clinical details are not yet available.

Actinomycosis.—In addition to the three cases, already mentioned, of actinomycosis of the central nervous system and the lung, caused by *Actinomyces bovis*, this anaerobic species was also isolated from three other cases of actinomycosis. A preliminary study was made of six cultures of aerobic types of actinomycetes: from mycetoma of the hand, apparently contracted in India 30 years previously; from actinomycosis of the appendix; from chronic otitis externa contracted in North Africa; from an abscess of the neck following teeth extraction; an acid-fast species from multiple abscesses contracted in India; and another acid-fast species from a deep wound in the lumbar region contracted in North Africa. Correspondence in connexion with these cases confirms the value of penicillin in the treatment of actinomycosis caused by the aerobic as well as that caused by the anaerobic species of *Actinomyces*, and it is to be hoped that some, at least, of these cases will be published by the doctors concerned. In the meantime the further mycological study of the cultures awaits a favourable opportunity.

Miscellaneous Mycoses.—There were two cases of otomycosis or "tropical ear" caused, in England, by *Aspergillus flavus*. Scrapings were received from two cases of "hairy tongue," but the only fungi isolated from them were yeasts of the genus *Saccharomyces*, which may be regarded as contaminants. There is no evidence that hairy tongue is in fact a mycosis. Another example of a doubtful mycosis was a case of chronic sinus of the neck communicating with a deep-seated mass from which ichorous pus was discharged intermittently over a period of eight years, the sinus closing in the intervals between evacuations. Apparently no bacterial cause had been found, and the possibility of epithelial cyst was considered. A specimen of the necrotic pus received for examination contained masses of fungal mycelium, from which a pure culture of a species of *Cephalosporium* was isolated. The relation of this fungus to the lesion is uncertain; it may have been the primary cause or merely a secondary invader which succeeded in establishing a parasitic foothold. No further information or specimens were obtainable.

Idiopathic Lymphadenopathy.—A series of lymphatic glands from cases of possible non-pulmonary tuberculosis was examined mycologically, but no pathogenic fungus was found. Although acid-fast bacilli were not discovered by microscopy in any of the glands, there is little reason to doubt that they were tuberculous, and, in fact, a few were found to be so by inoculation into guinea-pigs.

Mycoses of the Lower Animals.—In addition to epiphytic infections, the naturally acquired deep mycoses of the lower animals, especially rodents, may be important in connexion with fungous diseases of man. Nearly all the grave systemic mycoses have been found in domesticated animals, but none of these animals can be regarded as a reservoir of the infection. On the other hand, desert rodents are known to be the natural reservoir of coccidioidomycosis, and rodents have been suspected in connexion with histoplasmosis. Rats and mice are susceptible to artificially induced infection by many pathogenic fungi. It was hoped, therefore, that material from wild rodents would have been obtained for examination, but none has been forthcoming up to the present time. Two pathologists sent sections of tissue which showed mycoses of the kidney in laboratory rabbits, but in the absence of cultures the genera of the infecting moulds could not be determined. Many specimens were received of aspergillosis of birds in captivity, from all of which *Aspergillus fumigatus* was isolated. This ubiquitous fungus invades the air system and lungs and frequently the solid organs of birds in captivity, but the disease is almost unknown in birds in the wild state. The fungus is commonly present on grains and seeds, but diving birds are affected as well as seed-eaters, and it seems probable that the infecting form of the fungus is the mycelial growth vegetating in stale drinking or other water, which gains entry through the nostrils.

Ringworm Infections

Specimens of materials from ringworm disease of man were received from places as remote as Aberdeen and Northern Ireland, but the greater numbers were from the southern and south-western counties, the London area, and East Anglia. Isolations of 490 cultures of dermatophytes were made, and of these isolates 216 were species usually parasitic on the lower animals; until shortly before the end of the eighteen-months period, however, the total number of "animal" kinds of ringworm fungi isolated had exceeded that of the peculiarly "human" kinds. The species and their respective numbers were as follows: *Microsporum audouini*, 200; *M. felineum*, 98; *M. lanosum*, 58; *Trichophyton tonsurans*, 4; *T. sulphureum*, 6; *T. acuminatum*, 1; *T. rubrum*, 17; *T. discoides*, 15; *T. asteroides*, 24; *T. persicolor*, 2; *Trichophyton* with downy culture (like the "niveum" group of Sabouraud, but probably a pleomorphic variant of *T. asteroides*), 16; *T. rosaceum*, 2; *Epidermophyton floccosum*, 33; *Achorion schönleinii*, 13; and *A. quinckeanum*, 1.

The Microsporons.—*Microsporum audouini* was the most widely distributed fungus causing tinea capitis, and it was the species responsible for epidemics of ringworm in schools and other institutions for the young. The total number of isolates of this species was swollen by the numbers of specimens received from single outbreaks. *M. audouini* seems to be the predominant species causing tinea capitis in the Midlands and the North; while the cat and dog types, *M. felineum and M. lanosum* (now regarded as a single species), were common on school-children in the southern counties and in the London area. In London *M. audouini* and *M. felineum* were found in approximately equal numbers. In an area of Devonshire between Exeter and the coast *M. felineum* predominated in 11 towns or villages, apparently to the exclusion of other microsporons, and the species was also found widely distributed in other parts of Devon, Dorset, and parts of Hampshire. In Portsmouth, where, despite the evacuation of part of the child population, there is statistical evidence of a striking increase in the number of cases of ringworm during wartime, the fungus concerned in the indigenous infections is *Microsporum lanosum*; other species isolated have always been traced to sources of infection outside the borough area. In Lincoln a series of sporadic infections by *M. felineum* occurred over a period of a few months, and, although the same peculiar strain of *M. felineum* was identified in all the cases, there was in no instance a history suggesting infection from another child; presumably all had been infected directly from an animal source. *M. lanosum* and *M. felineum* are transmitted chiefly from child to child, but it seems probable that frequent renewals from the animal reservoir of the infection are necessary for the propagation of this kind of ringworm among children. How long this disease can be transmitted as a child-to-child infection without renewal from the animal reservoir was not determined in the present survey, but among the Portsmouth cases Dr. T. E. Roberts, the school medical officer, obtained in about one-fourth of the *M. lanosum* infections a history of possible contact with a dog or cat presumed to be suffering from ringworm; and in a group of *M. lanosum* infections originating from a puppy in Cardiff Dr. B. A. Thomas noticed that the skin lesions on children infected directly from the animal were more severe than those resulting from the first subsequent child-to-child transmission; which might suggest an early attenuation of the fungus. Some time later Dr. Thomas traced second and third child-to-child transmissions in this series.

Lesions of the scalp caused by the animal microsporons were, on the whole, more acute and showed a greater epidermal

reaction than those caused by *M. audouini*, but inflammatory reaction was rare, and only one, rather doubtful, kerion caused by *M. felineum* was reported. Infection of the glabrous skin by the animal types occurred, with or without associated tinea capitis, and, especially in the case of *M. lanosum*, the skin lesions were often inflammatory or crusted. *M. audouini*, on the other hand, usually caused only a simple pilary infection with little if any epidermal reaction and no associated lesion of the glabrous skin; but occasionally a scaly or very mild inflammatory condition of the scalp was reported, and in school epidemics some of the children showed transient circinate lesions on the face or neck and rarely on the trunk. In only one such case, however, was material from the body lesion available for examination and confirmation of the clinical diagnosis. It is therefore not always possible, except in the presence of severe skin lesions, to distinguish the human from the animal types of microsporosis by clinical inspection alone.

Tinea capitis caused by the animal microsporons usually yields readily to treatment with fungicidal ointments, which provoke a local inflammatory reaction, and it is not often necessary to have recourse to *x*-ray epilation. *M. audouini* infections, on the other hand, usually require *x*-ray treatment.

Strain peculiarities were shown in cultures of some species, especially *M. felineum* and *M. audouini*, and were useful in tracing the distribution of an infection. Two cultures of *M. felineum*, from brothers, formed slowly developing glabrous colonies resembling those of *Microsporum ferrugineum*, but in later subcultures the organs characteristic of *M. felineum* were found, albeit in an imperfect form.

The existence, in certain areas, of a relatively large amount of tinea capitis caused by microsporons of the animal type tends to simplify treatment but introduces new problems in epidemiology and control.

The Endothrix (Human) Trichophytons.—Trichophyton sabouraudi (= *T. acuminatum*) was found once only, on chronic onychia of the finger-nails of a hospital nurse who had contracted the infection in childhood. *T. tonsurans* (= *T. crateriforme*) was isolated from three cases of tinea capitis and one case of tinea circinata without scalp lesions. *T. sulphureum* was isolated from six cases in a nursery outbreak of tinea capitis with associated tinea circinata.

The Small-spore and Large-spore Ectothrix (Animal) Trichophytons.—Trichophyton asteroides (= *T. mentagrophytes, T. gypseum asteroides*, etc.) was isolated from lesions on the glabrous skin, from tinea capitis, and from "athlete's foot." It was found on adults, on children, and even on babies. The lesion on the glabrous skin was usually a well-defined raised plaque or circle; profuse scaliness and some vesiculation were frequently reported, but, except in one case, no marked inflammation or suppuration. The scalp infection was sometimes mistaken for microsporosis, but the skin of the scalp was more often affected than the hair. In one case there was a double infection in which *T. asteroides* attacked the scalp epidermis and *M. felineum* the hair, and there was a single case of true kerion. In five cases the hair was attacked, usually with involvement of the scalp epidermis. In other cases the lesion the chest, forearms, and shoulder (1 each), the thigh (2), was situated on the scalp epidermis alone (1), the hand (2), the knee (3), the finger-nails (1), in the condition of athlete's foot (4), and in a situation not stated (3).

The suspected animal sources of the infection were horses, cats, dogs, and rodents (white mice), but materials from the suspected animals were not obtained for examination. In other cases the infection was attributed to handling hides, rubbing against a farm gate-post, and falling in a farmyard; in the last case the ringworm developed on an abrasion of the knee caused by the fall.

Trichophyton persicolor was isolated from sycosis on a farm worker and from lesions on the fingers of a farmer's young daughter. *Trichophyton* sp. with downy culture, which is probably a pleomorphic variant of *T. asteroides* and not the "niveum" type of Sabouraud, was isolated from 16 cases, including seven cases of athlete's foot. The character and distribution of the lesions and the histories given were similar to those of the *T. asteroides* infections.

Trichophyton discoides, a common cause of cattle ringworm, was found on farm workers and children, usually "evacuees," living on or visiting farms. In four cases it caused a simple ectothrix-megaspore hair lesion, sometimes associated with tinea circinata, apparently without inflammatory reaction, but there were five cases with severe kerion. In four cases there were only simple scaly lesions of the skin without inflammation, but in two others the skin lesions showed a marked inflammatory reaction. In all cases a history was obtained, directly or by inquiry, of contact with infected calves.

Favus.—Achorion schönleinii was isolated from 13 cases of favus, 8 of which seem to have been clinically atypical. In three—a woman aged 32 and her two young children—the diagnosis of microsporosis had been made because of the greenish fluorescence given with Wood's lamp—an example of the danger of basing the diagnosis on the result of "lamping" alone. The cases of favus had occurred in Sussex, Caernarvonshire, Cambridge, and Aberdeen, and in all except one instance more than one member of a family was affected.

Athlete's Foot.—Tinea pedis and the associated lesions on other parts were investigated in civilian and military patients, and 62 isolations of dermatophytes were made, of which 33 were *Epidermophyton floccosum*, 15 *Trichophyton rubrum*, 5 *T. asteroides*, 2 *T. rosaceum*, and 7 *Trichophyton* sp. with downy culture—probably a pleomorphic variant of *T. asteroides*. On the whole, *T. asteroides* seemed to be associated with the more severe kinds of lesion, and *T. rubrum* infections were the most resistant to treatment. Athlete's foot is of special importance in naval and military practice and in the coal-mining industry, and it merits a fuller investigation in Great Britain. The work on this group of infections will be made the subject of a separate report.

Conclusion

The number of serious systemic mycoses reported may appear small, but it must be admitted that the most promising field for such material has not yet been explored. Of the specimens from grave fungous diseases, 66% were received from one general hospital, and there is no reason to assume that mycoses gravitate to that hospital. It is significant, however, that the pathologist concerned is deeply interested in medical mycology, and no fungous disease escapes his attention. If careful and constant watch were kept for possible fungous diseases in all hospitals it is probable that a considerable number would be found; for mycoses, because of their clinical resemblance to tuberculosis and other infective granulomata, tend to elude diagnosis unless sought for specially. In assessing the results of this survey up to its present stage, it should be understood that under the existing emergency conditions all the examinations and the considerable volume of correspondence devolved, as a part-time duty, on one person, which restricted the scope of the work; but the results obtained indicate that fungous diseases, both indigenous and imported, are not less important in Great Britain than in other countries, and they present a field for further investigation and research.

[The work of mycological examination hitherto carried on at Winchester has been transferred to the Laboratory for Medical Mycology at the London School of Hygiene and Tropical Medicine.]

It would not be possible to acknowledge individually the help of the large number of contributors to the collecting scheme, but it may not be invidious to express special thanks to Dr. J. C. Cruickshank, of Exeter, Dr. W. G. Millar, of Lincoln, Dr. T. E. Roberts, of Portsmouth, Dr. B. A. Thomas, of Cardiff, Dr. Clara M. Warren, of London, and Brig. R. M. B. MacKenna and the dermatologists of the Royal Army Medical Corps for very helpful co-operation in the survey of dermatomycoses.

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H. E. Twining, H. W. Szylejko, and R. A. Kern (*U.S. nav. med. Bull.*, 1945, **45**, 479) treated 41 cases of Vincent's angina by penicillin, and found that the majority (29) were cured by one course of ten intramuscular injections of 20,000 units. The remainder were cured by a second similar course given a day later, or a total of 400,000 units. The average number of hospital days for the penicillin treatment was seven, compared with 23 for cases treated by all other methods.

TREATMENT OF ACUTE APPENDICITIS

A STUDY OF 480 CONSECUTIVE CASES

BY

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Acute appendicitis is still a very serious problem in spite of widespread propaganda aimed at early treatment and the avoidance of purgation by well-meaning parents in cases of undiagnosed abdominal pain in children. The overall mortality appears to vary fairly widely in different clinics. Grey Turner (1943) gives his own mortality figures over a period of some years as 3.49%. The figures of Busch and Spivack (1940), Arnheim and Neuhof (1940), and Jennings *et al.* (1942) vary between 1.8 and 2.2%. Dennis *et al.* (1942), who reviewed the reports from a number of American clinics, found that the death rate varied between 2.3 and 6.3%, with an average of 4.12%. Jennings *et al.* (1942) published tables summarizing the mortality figures from various reviews and found that they varied from Lazzarini's (1937) of 12% to their own of 1.9%.

Since the beginning of 1943 up to the present—i.e., the middle of 1945—I have personally dealt with a total of 480 cases of acute appendicitis. During 1943 the cases were treated at Glasgow Royal Infirmary and at an E.M.S. hospital. Since the beginning of 1944 the cases included have been those which came under my care in Greenock Royal Infirmary. In this consecutive series there were two deaths—an overall mortality of well under 0.5%. The series comprises patients of all ages from 4 to 72, and thus represents a very mixed collection of appendicitis cases. It is proposed to discuss briefly the treatment of these cases in an attempt to evaluate the factors responsible for this low mortality figure.

Classification and Treatment

We have divided the cases into four groups. The general methods of treatment will be discussed with each group.

1. Acute Appendicitis without Peritonitis

Into this group fell cases where the appendix was congested but showed little or no fibrinous deposition on its surface. Most of these were admitted within 24 hours of the onset of illness. Histologically there was usually ulceration of a crypt and leucocytic infiltration in the submucosa extending into the deeper parts of the muscularis. The cases were those frequently called acute catarrhal appendicitis. Of our cases 177 belonged to this group. Appendicectomy was carried out in all of them. The mortality was *nil*, and there were no post-operative complications.

2. Acute Appendicitis with Local Peritonitis

In this group the length of illness varied from 12 to 72 hours. The appendix showed the varying stages of pathology from acute suppurative or phlegmonous inflammation up to gangrene. All of them had much fibrinous deposit on the peritoneal surface, with a varying quantity of turbid or sero-purulent fluid in the abdominal cavity.

This group comprised 188 cases. Early appendicectomy was carried out in all but two of them—one an elderly woman who showed evidence of marked cardiovascular degeneration, the other a young male subject who had a tuberculous pleural effusion. They were treated by the "delayed" method, and the omental mass around the inflamed appendix slowly decreased in size and disappeared. Delayed removal was not considered advisable in these cases. Care was taken in this group to mop up most of the free fluid in the abdomen, as a positive culture was got in two-thirds of the cases tested. In most of them the organism found was coliform in type, although a streptococcus was present in two. All were closed without drainage except two in which there was a marked oozing of blood from the appendix bed. In these a little packing was inserted and brought out through the lower end of the wound. In cases in which the free fluid is frankly sero-purulent we believe it is advisable to irrigate the tissues of the abdominal wall with acriflavine solution and then dust them with sulphanilamide powder. This should be done immediately after the peritoneum has been closed. In the more advanced cases in this group we also sprinkled sulphanilamide into the peritoneum.

In one case a residual abscess developed a week after the operation and was drained by the suprapubic route. There were 5 septic wounds, all of which cleared up without trouble. There were no deaths.

3. Acute Appendicitis with Spreading Peritonitis

In all but four of the 52 cases included in this group the appendix was ruptured. In every one of them there was evidence of spreading peritoneal inflammation at a distance from the appendix, with diffuse fibrinous deposition and pus formation. Mere reddening of the peritoneum was not by itself taken as indicative of peritonitis, as this was found in many of the cases included in the previous group. In 27 of the cases the patient was classified as "desperately ill" and the condition was accompanied by marked toxicity and some degree of paralytic ileus. Early rather than urgent operation was carried out in all these cases except one, which was treated by the "delayed" method. In the very ill cases intravenous therapy was started—at once in the case of adults, and during the operation in children, who were otherwise more readily upset by the procedure. In all these ill patients it was found that a few hours in the Fowler position and the parenteral administration of sulphanilamide not only made them more fit for operation but caused the inflammatory products to gather in the lower abdomen, from which they could be more readily removed. In four of the cases an immediate enterostomy was carried out because of advanced paralytic ileus. In a fifth this was required six days after the primary operation. The fistula closed in all these cases but one, in which it eventually closed after five months.

Gastric suction was used in all the cases in which post-operative vomiting and distension became pronounced. When this happened a Ryle tube was passed by the nasal route and aspiration carried out by a syringe every half-hour.

Sulphanilamide was freely used in this group, particularly locally, and will be discussed later in this article. All the cases but four were drained. In one of the latter a large abscess developed in the abdominal wound two weeks after the operation.

The only patient treated by the real "delayed" method was a young seaman who had been operated upon in mid-Atlantic. The ship's medical officer had failed to find the appendix, and closed the abdomen without drainage. When seen by us some days later the patient had a diffuse peritonitis. He was treated in the Fowler position, with sips of water and intramuscular sulphonamide. The tenderness slowly decreased and finally faded off into the right lower abdomen after five days.

In many of the cases in this group the patient had a few days of grave illness, during which great emphasis was placed upon intravenous sulphonamide therapy. After this a steady recovery was made. The mortality rate was *nil* in this group.

4. Appendiceal Abscess

In most cases the abscess lay in the pelvis or behind the caecum. In a few it was retro-ileal, and in one it lay completely enclosed in omentum, forming a mass which was freely movable in the abdomen. There were 63 cases in this group. All but five of them were operated upon at once, and of the latter two were drained after a few days because of signs of extension of the inflammatory process. Thus, only three were treated by the real "delayed" method. In all but four of the cases the appendix was removed at the time of operation. We agree with Arnheim and Neuhof (1940), who pointed out that it is preferable to remove the appendix in these cases, not only because it may remain a potentially infected focus in the abdomen but also because other abscesses may lie behind it and be opened only after it has been detached. When the pus had been swabbed from the cavity sulphanilamide powder was liberally shaken into it and a drainage tube left in position.

The patients in this group were on the whole not nearly so ill as in Group 3, and intravenous therapy was required much less often. The only two deaths in the whole series of cases occurred in this group. One was that of a child who died suddenly, a few hours after operation, of what looked like an

acute oedema of the lungs. A necropsy was not allowed. The other was that of a man aged 35 who died of a recurrent pelvic abscess eight days after the original operation. This case and the mistake which led to this complication will be referred to later.

Special Points in Treatment

Before beginning the present series of cases I attempted to formulate the most frequent causes of death in acute appendicitis. The most early important cause appeared to be the practice of operating at once on very ill patients "as a last resort." Another, particularly in children, was post-operative bronchopneumonia, and this seemed to be at least partly attributable to the anaesthetic. After some days cellulitis of the abdominal wall and residual abscess became important causes of morbidity and mortality. It was then decided to pay particular attention to means which might conduce to the prevention of these complications. The following points in technique appeared to be of importance.

(a) Anaesthetic

Well over 80% of the anaesthetics given to the cases of this series were administered by house-surgeons. We believe that there is nothing more injurious to a seriously ill patient than a raw house-surgeon attempting to use one of the complicated series of tubes and dials which constitute a modern anaesthetic apparatus. My house-surgeons are therefore instructed in the method of giving open ether without chloroform, and this is the anaesthetic always used in cases of acute appendicitis. Recently the induction has been made more rapid and comfortable for the patient by the use of vinesthene mixture. In extremely ill cases nitrous oxide with light ether has been given. In ill patients ether tends to stimulate the heart, and, in children particularly, there is a stage immediately after the completion of the operation when this stimulant effect wears off and the tendency to cardiac collapse becomes marked. This is minimized by having the intravenous drip started before completing the operation and by administering enough plasma to keep the circulatory volume up to normal. A mild post-operative bronchitis has been common, and in some cases a basal pulmonary collapse has occurred. These chest complications were not serious, and in regard to the death already mentioned as being due to pulmonary oedema there was doubt whether this was primarily due to the heart or to the lungs. Immediately after the operation patients are instructed in deep-breathing exercises and in many cases are made to inhale carbogen frequently. It is our impression that this has definitely reduced chest complications.

(b) Fluid and Chloride Replacement

In all very ill patients an intravenous drip was set up—in adults at once and in young children while under the anaesthetic—and saline, glucose, and plasma were administered. In most of the cases the lower end of the internal saphenous vein was found to be the best site of administration, and, particularly in restless children, the application of a light plaster to the foot and ankle will allow the intravenous therapy to be continued for days on end. Where the patient is very collapsed it is often exceedingly difficult to run fluid into the saphenous, and in such a case a vein of the antecubital space is more suitable. The speed of administration is regulated according to the needs of the patient and the effect on his pulse. The danger of overloading the right heart appears to us to be much less in the shocked and dehydrated patient than is usually suggested; and it is very gratifying to bring a patient literally back to life by running one or two pints of fluid into his circulation at a fairly rapid rate. We cannot overstress the importance of intravenous therapy in these very ill cases of peritonitis, and we feel that this has played a most important part in the low mortality figures.

(c) Time of Operation

The "delayed" or Ochsner-Sherren method of treatment in the advanced but localized appendiceal inflammatory process is too well known to require elaboration. It is in the treatment of diffuse peritonitis that there is some difference of opinion. It is interesting to note in passing, as has been pointed out by Guerry and McCutchen (1942), that it was really with reference to this type of case that Ochsner's (1934) original description of the "delayed" treatment was given. To quote from his article on appendicitis:

> "The temperature was 104° F., the pulse 140, the abdomen enormously distended, and the features pinched. My experience with this and other similar cases has taught me that whenever I operated upon patients approximately in this condition the patient invariably died. Some years ago . . . I frequently operated upon patients in this condition as a last resort, thinking that this gave them the last chance of recovery. The majority of these patients recover if the delayed treatment is followed."

There has been abundant evidence of the truth of Ochsner's observation, although most authors do not differentiate very well between the localized and the diffuse type of peritoneal involvement. Coller and Potter (1934) reduced their mortality from 52 to 8.6% by the "delayed" treatment in this type of case. Davis and McLaughlin (1940) reduced theirs from 60 to 14%, and Guerry and McCutchen (1942) reported a mortality rate of 10.6% in 96 cases treated by immediate operation and one of only 1.4% in 139 cases treated by expectant means.

Where there is pus, free and unlocalized, in the peritoneal cavity it is surely a fundamental surgical principle that it should be mopped up as soon as possible and the suppurating focus dealt with. Thus we have preferred early operation in these cases but have waited for some hours with the patient in the Fowler position in order to allow the inflammatory products to settle in the pelvic region and the initiation of intravenous therapy. Our results have been very satisfactory, all of our 52 cases making uninterrupted recoveries. We must remember, however, that the use of sulphanilamide may have played an important part in the recovery of this type of case, as we shall see later.

(d) Abdominal Incision

We now use Battle's incision in all our appendicectomy cases. Our only exception to this rule has been where the gridiron approach has been more directly over an abscess. We have had no example of sepsis spreading up the rectus sheath, nor have we seen an incisional hernia follow its use. The abdominal contents can be better visualized and a "difficult" appendix removed more easily and with less tendency to break down protective adhesions than with any other incision we know. As it is unnecessary to tear through muscular strata, and as the approach is a more direct one, there is less tendency to "pocketing" of pus in the abdominal wall than with the gridiron incision.

(e) Use of Sulphonamides

There is now much experimental and clinical work which proves the value of the sulphonamide group of drugs in the treatment and prevention of peritoneal infection. McGehee (1941) reported 401 cases of appendiceal perforation in which sulphanilamide had been used, with the low mortality figure of 6.2%. By the use of sulphonamides in the post-operative treatment of acute appendicitis in children Wattenberg and Heinbecker (1942) were able to reduce their mortality rate from 7.89 to 2.2%. Favourable results have also been reported by Thompson *et al.* (1941) and Stafford (1942).

The experimental work of Rosenburg and Wall (1941) and of Epps *et al.* (1942) in rats and dogs demonstrated that the mortality rate of peritonitis in these animals fell rapidly when sulphonamides were used. There is still some speculation as to which is the best individual sulphonamide compound to employ in peritonitis. Sulphanilamide powder appears to be the most popular local application, although sulphathiazole is preferred by many because of its greater potency in the usual peritoneal infections. Sutton (1942) has, however, reported adhesions following the use of this drug, a secondary intestinal obstruction actually developing in one case. This might be avoided by the suggestion of Epps *et al.* (1942) that a suspension of the drug would be more readily disseminated throughout the peritoneal cavity. Ambrose and Griswold (1942) found that sulphadiazine is absorbed from the peritoneum more slowly than either sulphanilamide or sulphathiazole, and Lyons and Burbank (1942) showed that sulphapyridine and sulphadiazine remained longer *in situ* than any of the other compounds. Gardiner (1944) obtained satisfactory results by using a suspension of sulphapyridine in saline, the rate of absorption from the peritoneum being very slow, and the drug still being present in the blood up to a week later.

Again, there is no unanimity as to the safe intraperitoneal dosage of the sulphonamides. Jackson and Coller (1942) found that after implanting 5 g. of sulphanilamide powder in the peritoneum the maximum blood concentration of nearly 10 mg. per 100 c.cm. was reached in about two hours. At 24 hours the level was less than 2 mg. per 100 c.cm. Hudson and Smith (1942), using an average of 15 g., found the peak concentration in the blood stream in about 12 hours, the figure falling to zero in 36 to 48 hours. Tashiro *et al.* (1942) pointed out that a blood concentration of 1 mg. per 100 c.cm. could be expected for every gramme of sulphanilamide placed in the peritoneum. Waugh *et al.* (1943) calculated that the systemic administration of the drug should be started 24 to 48 hours after the intraperitoneal administration of sulphanilamide and 3 to 4 days after sulphathiazole.

In our series the sulphonamides were considered to be unnecessary in the ordinary case of uncomplicated acute appendicitis. In the late suppurative stage they were sometimes used, and in the cases complicated by abscess or diffuse peritonitis their use was extensive. Sulphanilamide powder was employed. The powder is put up in double packets, each containing 5 g. and already sterilized, so that the surgeon has merely to lift out the inner packet after the nurse has torn off the top of the outer envelope. The dose varied between 5 and 10 g., depending upon the severity of the illness and the age of the patient. About two-thirds of the amount used was placed inside the abdomen and the remaining third in the tissues of the wound. After the pus had been swabbed from the abdomen the powder was simply "dumped" into the peritoneum, no great effort being made to disseminate it. Care was taken, however, to rub it evenly into all the corners of the wound. Particular care was taken to smear it abundantly round the track of the rubber drain, and it also seemed advisable to close the tissues snugly round the tube to minimize the escape of pus into the abdominal wall for at least the first few critical post-operative days until the raw tissues had acquired some immunity to infection. We also found it useful to spray the powder on to the stitched surface of the wound in order to protect it from escaping pus. In the very ill cases parenteral sulphonamide was started about 40 hours later, soluble sulphapyridine being given intravenously or sulphathiazole orally. The dosage was 1 g. four-hourly.

There was one important point in after-treatment which bitter experience taught us. In our earlier cases it was found that local application of the drug appeared in many cases to only temporarily subdue the infection which sometimes flared up into activity after four to six days. We thus learned to leave the drain in position longer than usual, and now allow it to be only very slowly shortened, so that it is not completely removed until the fifth or sixth day. We have already noted that one of our deaths was due to a residual pelvic abscess which flared up into activity a week after the primary operation. In this case the drain had been completely removed on the third day. Such a case is, of course, also an argument for the post-operative use of parenteral sulphonamide in all such conditions.

(f) Drainage of the Peritoneum

When a young surgeon removes a suppurating appendix and finds the peritoneum containing an abundant quantity of turbid almost frankly purulent fluid, his first inclination, on general surgical principles, is to drain the abdomen. To do this in such a case would be to disregard the excellent protective and reparative properties of the peritoneum. A very instructive experiment can be carried out by injecting a suspension of staphylococci into the peritoneum of a rabbit. Periodic examination of the peritoneal contents shows that there is an immediate phagocytic response, and within a few hours most of the organisms have been ingested by emigrating polymorphonuclear cells, the latter being afterwards phagocytosed by macrophages derived mainly from the serous lining. This suggests that where a peritoneal infection is not too overwhelming, and the focus of infection has been removed, the peritoneum may be allowed to look after itself. If we may be permitted to quote from Hilton's (1930) famous book, "Nature has a constant tendency to repair the injuries to which her structures have been subjected, whether these injuries be the result of fatigue or exhaustion, of inflammation or accident. Also this reparative power becomes at once most conspicuous when the disturbing cause has been removed."

Buchbinder *et al.* (1931) showed experimentally the fallacy of peritoneal drainage. They produced peritonitis in dogs by opening a loop of gut and leaving it for 24 hours. They then reopened the abdomen and closed the bowel. In the cases in which the abdomen was then drained the mortality was 100%. When closure was effected without drainage the mortality fell to 57.5%. Haggard and Kirtley (1940) quote Giertz, who found that, in cases of appendiceal peritonitis operated upon in the first 48 hours of illness, he was able to reduce the mortality from 22.2 to 3.5% by primary closure of the peritoneum.

In our series of cases, wherever possible, we refrained from draining the abdomen. We have followed the general principle that drainage is unnecessary when the appendix is unruptured, unless the peritonitis is obviously of advanced degree. The examination of peritoneal smears demonstrated the truth of this. In the early unperforated case the turbid fluid shows many polymorphonuclear leucocytes, some of which contain engulfed bacteria; only very occasionally are free bacteria found. In such a case it is obviously best to leave the peritoneum to combat the infection. As the condition progresses, however, the polymorphs become more degenerate and poorly stained, and the free bacteria more abundant. In frankly spreading peritonitis bacteria are abundant, most of the polymorphs are degenerating, and a piece of excised omentum shows stagnant and dilated blood vessels, many of which contain hyaline thrombi, and most of the lymphatic pathways are obviously blocked by fibrin thrombi. In such a one-sided struggle it is obviously safer to drain—not only to remove the products of bacterial activity but also to avoid abscess formation. In our past experience the main danger of peritoneal drainage has been the tendency to infection of the abdominal wall setting up a cellulitis. In the present series this danger appears to have been reduced to negligible proportions by the local use of sulphanilamide.

Conclusion

It is very difficult for any surgeon to evaluate properly the factors responsible for a decreasing morbidity and fatality rate in a series of cases such as this, particularly when this is a natural sequel to an increasing experience. In our series, however, the most important factors appear to have been the prompt use of intravenous therapy to restore fluid balance, and the intraperitoneal use of sulphanilamide powder.

Summary

A consecutive series of 480 cases of acute appendicitis with a mortality of under 0.5% is described. The main reasons for this low mortality are discussed.

My thanks are due to Mr. G. H. Stevenson and to Mr. W. A. Sewell, in whose wards I treated the early cases of this series; and particularly to my registrar, Mr. G. Russell Thomson, for his help and co-operation, without which the favourable results would have been impossible.

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HEAVY NUPERCAINE SPINAL ANALGESIA IN OPERATIVE OBSTETRICS

WITH REPORT ON 394 CASES

BY

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The safety of spinal analgesia in general surgery is recognized by most authorities nowadays. Its use in obstetrics, however, is still looked upon as a "risky" and even dangerous practice by the majority of obstetricians, in view of the occasional alarming drop in blood pressure, with its attendant dangers. In recent years a good deal of literature concerned with spinal analgesia in Caesarean section has appeared, among which may be mentioned reports by Brindeau (1935), Lloyd-Williams (1937), Murad and Parhad (1937), Cosgrove, Hall, and Gleeson (1937), Duca (1938), Pérez and Guglielmo (1939), Sebrechts (1940), and Weintraub and Merriam (1943).

The first recorded series of cases performed under heavy percaine (or nupercaine) spinal analgesia was that of Thomas 1942, 1944), who reported two series totalling 203 Caesarean sections, of which 200 were carried out under heavy percaine, without a maternal death due to that drug or a maternal death due to any cause whatever during its use.

In the past two years analgesia by the spinal route, using heavy nupercaine, has been the method of choice in the obstetrical department of this hospital for patients requiring Caesarean section and operative vaginal delivery. In this period spinal analgesia was given successfully on 394 occasions to 393 patients, 137 of whom had Caesarean section and 256 operative vaginal delivery. This paper is an analysis of the results in these cases, and an attempt to estimate the safety of heavy nupercaine in operative obstetric practice.

Solution Used.—Heavy nupercaine (Ciba Ltd., 1944) is the hyperbaric solution, 1 in 200, with 6% glucose, and is made up in sterile 3-c.cm. ampoules. It is a derivative of quinoline—the hydrochloride of α-butyloxycinchoninic acid diethylethylenediamide.

Premedication

In Caesarean Section.—(i) Cases not in labour, or in early labour, in which sedatives have not been given. Omnopon 1/3 gr. and scopolamine 1/300 gr. were administered about 45 minutes before operation. Atropine 1/100 gr. was given in all cases, in the event of the spinal analgesic not producing the desirable effect and a general anaesthetic becoming necessary. Ephedrine 1 gr. was given to all patients at the same time, to combat a drop in blood pressure. (ii) Cases of trial labour under twilight sleep, or cases in which other sedatives have been used. Atropine 1/100 gr., with ephedrine 1 gr., was given as a routine as in (i). Other supporting sedatives were not found necessary.

Cases requiring Operative Vaginal Delivery.—Supporting sedatives were rarely needed, as twilight sleep or other methods of sedation were prescribed in the majority of cases. Ephedrine 1 gr. was given to all patients half an hour before operation. We have often employed paraldehyde by the rectal route, in cases of severe pre-eclamptic toxaemia ("eclampsism") and cases of essential hypertension, in labour. In these no other supporting sedative was used when operative vaginal delivery was considered necessary. In one case of intra-partum eclampsia 6 dr. of paraldehyde in 4 oz. of olive oil was given as a routine. Delay in the second stage of labour occurred, and forceps extraction was indicated. Ether or chloroform anaesthesia was contraindicated owing to the presence of bronchitis after a recent attack of influenza. The paraldehyde acted as premedication to both the spinal puncture and the forceps extraction under spinal analgesia.

Technique of Administration of the Spinal Analgesic

In Cases requiring Caesarean Section.—The technique outlined by Thomas is clear enough to need little elaboration. The dosage we used was 1.2 to 1.5 c.cm., barbotage being part of the method.

In Patients requiring Operative Vaginal Delivery.—An important preliminary procedure in dealing with these cases was the reassurance of the patient immediately before the operation, as occasionally the mere movement of the woman during traction on the foetus, such as with forceps, caused her marked anxiety, although no real pain was experienced during the entire operation. The technique of administration was similar to that employed in Caesarean section, with a few variations. The Trendelenburg and lithotomy positions used after injection of the analgesic solution were found unnecessary here. The dosage employed was 0.5 to 0.8 c.cm., with barbotage. Analgesia reaching to just below the level of the umbilicus, including the pelvic floor and perineum, was obtained. In several cases the "sitting" posture was adopted, especially with extremely obese patients, in whom the spinal column was difficult to define, and with patients in whom spinal deformities existed. The subject is turned on to her back immediately after the introduction of the analgesic, as described above.

Analysis of the Cases

394 spinal analgesias were administered to 393 patients, 137 of whom had Caesarean section and 256 operative vaginal delivery. (One patient had two successful analgesias.) Patients requiring supplementary inhalational or intravenous anaesthesia were not included in this series.

Indications for Caesarean Section.—Table I summarizes the indications, the majority of which were provided by contracted pelvis, previous section, and disproportion. Included in this series were two patients with disproportion in whom unsuccessful attempts at forceps extraction had been made before admission to hospital. In 7 cases sterilization by the Madlener method was performed, and in one a large ventral hernia was repaired.

TABLE I.—*Indications for Caesarean Section*

Indication	Primigravidae	Multiparae	Total
Contracted pelvis	27	31*	58
Disproportion (including persistent occipito-posterior and transverse lies)	21	10	31
Placenta praevia	4	5	9
Foetal distress	8	—	8
Pre-eclamptic toxaemia	7	—	7
Bad obstetric history	—	5	5
Breech presentation (elderly primigravidae)	3	—	3
Essential hypertension (elderly primigravidae)	3	—	3
Accidental haemorrhage	2	—	2
Prolapse of the umbilical cord	2	—	2
Uterine inertia (elderly primigravidae)	2	—	2
Pelvic fibroid	2	—	2
Pelvic ovarian cyst	1	—	1
Ruptured uterus	—	1*	1
Chronic nephritis	1	—	1
Rigid cervix	1	—	1
Ruptured ovarian cyst	1	—	1
Total	85	52	137

* Previous Caesarean section.

Types of Operation.—Of the 137 operations performed 103 were lower uterine segment Caesarean sections (75.18%) and 34 were classic Caesarean sections (24.81%).

Indications for Operative Vaginal Delivery.—These are summarized in Table II. Delay in the second stage of labour was the main indication in 154 cases. There were 14 cases of "failed forceps"; these patients had had general anaesthetics before admission, and required operative delivery after treatment for shock. Destructive operations, such as craniotomy and perforation of the foetal head, were performed in 6 cases.

Methods of Delivery.—In 256 patients labour was terminated as follows: (i) *Low-forceps extraction* (136 cases): To one patient two spinal analgesias were administered—first for reposition of a prolapsed umbilical cord and the application of Willett's forceps, and five hours later for a low-forceps extraction. (ii) *Mid-forceps extraction* (108 cases). (iii) *High-forceps extraction* (8 cases): Three cases of hydrocephaly required perforation of the head before extraction. (iv) *Breech extraction*, 6 cases. (v) *Craniotomy*, 4 cases. Of 262 infants delivered 167 required manual rotation of the foetal head, arrested in the transverse and posterior positions.

TABLE II.—*Indications for Operative Vaginal Delivery*

Indications	Booked Cases					Emergency Cases					Total
	Positions					Positions					
	Ant.	R.O.T.	L.O.T.	L.O.P.	R.O.P.	Ant.	R.O.T.	L.O.T.	L.O.P.	R.O.P.	
Delay in 2nd stage:											
Anterior position	45	—	—	—	—	—	—	—	—	—	45
Deep transverse arrest ..	—	20	23	—	—	—	5	9	—	—	57
Persistent occipito-posterior ..	—	—	—	1	15	—	—	—	1	15	32
Impending inertia	10					6					16
Brow presentation	—					3					3
Persistent mento-posterior ..	—					1					1
Total	114					40					154
Foetal distress	41					17					58
Maternal distress	6					4					10
Prolapse of umbilical cord ..	2					—					2
Breech presentation	4					2					6
Hydrocephaly	1					2					3
Meningocele	—					1					1
Prophylactic forceps:											
Pre-eclamptic toxaemia ..	7					—					7
Essential hypertension ..	9					—					9
Previous Caesarean section ..	4					—					4
Heart disease	6					—					6
Pulmonary tuberculosis ..	2					—					2
Grand total	196					66					262

Post-operative Complications

Headache.—In spite of the precautions taken over lumbar puncture, this complication was the most serious feature of spinal analgesia in this series. After Caesarean section there were 17 cases (12.4%) of headache—7 (5.1%) severe and requiring sedatives, and 10 (7.3%) slight and requiring little or no sedation. Of the patients undergoing operative vaginal delivery 39 (15.2%) complained of headache—9 (3.5%) severe and 30 (11.7%) slight. In the complete series of 393 patients, therefore, 56 cases of headache occurred (14.2%). During the same period heavy nupercaine analgesia was used in 306 gynaecological cases, the technique being the same, and an incidence of 6.65% headache was found. Spinal headache was therefore encountered slightly more than twice as often in parturient as in non-parturient women.

Chest Complications.—Basal collapse was encountered in only one case in the entire series—in a patient who had had a Caesarean section. Bronchitis occurred in 7 patients—one after Caesarean section and 6 after vaginal delivery. Sixteen of the latter group had had general anaesthetics before admission to hospital. Pneumonia was not encountered.

Late Results.—There were no complaints of headache, or other complications attributable to the analgesic, after discharge from hospital.

Maternal Mortality ; Infant Mortality

(*a*) *After Caesarean Section.*—There were no deaths, immediate or remote, in the entire series of cases undergoing Caesarean section. (*b*) *After Operative Vaginal Delivery.*—Of 256 patients who were delivered by the vaginal route 2 died: the first, three days after forceps extraction, owing to aplastic anaemia following acute pyelitis treated with sulphonamides; the second, 16 days after delivery, owing to pulmonary embolism. The overall maternal mortality was therefore 0.50% in the 393 patients subjected to spinal analgesia, the deaths not being attributable to the analgesic.

Seven (5.1%) infants delivered by Caesarean section and 34 (13%) by operative vaginal route were lost. In no case was foetal death attributable to the analgesic.

Advantages of Heavy Nupercaine Anaesthesia

So far as Caesarean section is concerned nothing further can be added to the conclusions noted by Thomas in his paper "Caesarean Section under Spinal Analgesia"; these we confirmed.

In patients requiring operative vaginal delivery the advantages are:

To the Mother.—(i) Spinal analgesia is safe in patients with constitutional diseases which contraindicate general anaesthesia, such as chronic bronchitis, pulmonary tuberculosis, and chronic heart disease. (ii) It is safe in patients with types of liver and kidney impairment in which general anaesthesia may act adversely—e.g., pre-eclamptic toxaemia. (iii) It is safe in patients with essential hypertension. (iv) Uterine atony and undue uterine haemorrhage are rarely encountered in the third stage of labour. (v) Obstetric shock is rare. The spinal analgesic, acting as a regional nerve-block, cuts out reflex stimuli from the pelvis and perineum. This, associated with a lessened tendency to uterine haemorrhage, prevents the two chief factors which may produce obstetric shock. (vi) There is an absence of immediate post-operative discomfort and vomiting. The general condition of the patient, both during the operation and afterwards, is much better than after general anaesthesia. (vii) Pulmonary complications are rare.

To the Accoucheur.—(i) Spinal analgesics can be rapidly given, the technique being simple. (ii) Spinal analgesia makes it possible for the single-handed accoucheur to undertake manipulations or other treatment, in institutions suitably equipped. In the absence of a skilled anaesthetist the spinal analgesic may be given and the delivery performed by the accoucheur himself. This practice was carried out in every case in the series of 256 operative vaginal deliveries. (iii) Maximal relaxation of the pelvic musculature is obtained by the spinal analgesic, rendering intrapelvic manipulations, such as manual rotation of the foetal head arrested in the posterior or transverse positions, easier than under general anaesthesia. (iv) Additional anaesthesia is not required for the repair of an episiotomy or laceration.

To the Infant.—The analgesic has no detrimental effect whatever on the infant.

It is our opinion that spinal analgesia, using heavy nupercaine, is safe and reliable in operative obstetrics in selected cases of advanced pregnancy.

Contraindications to Spinal Analgesia

(i) Any disease of the central nervous system or of the vertebrae, or lumbro-sacral infection interfering with aseptic technique. (ii) In the presence of abnormal presentations, such as transverse lies, requiring internal or external version. (iii) A blood pressure below 100 mm. (iv) In acute shock. After the treatment for shock, spinal analgesia may be employed providing the blood pressure is over 100 mm. Hg. Spinal analgesia was used with striking success in 36 cases of acute shock, after routine shock treatment. (v) In acute heart failure from any cause. (vi) In the presence of "constriction ring dystocia." General anaesthesia was found to be essential in these cases to overcome uterine spasm.

Summary

Two series totalling 394 obstetrical cases, of which 137 were Caesarean sections and 257 operative vaginal deliveries under spinal analgesia, are presented. No maternal deaths attributable to the analgesic occurred.

Heavy nupercaine, 1 in 200, in 6% glucose, was employed in all cases.

The advantages, contraindications, and complications of spinal analgesia in operative obstetrics are outlined.

My thanks are due to Mr. George Brown, medical superintendent of this hospital, for permission to publish the results of these cases; and to the assistant obstetrical and medical officers who administered several of the spinal analgesics for Caesarean section and who performed a number of the operations. I am particularly indebted to the midwifery staff for the excellent supervision and nursing care.

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J. H. Lamb (*Arch. Derm. Syph.*, 1945, **52**, 93) records two cases of vesicular eruption due to penicillin in men aged 23 and 26. In neither case was the eruption serious, except that discontinuance of the drug became necessary because of extreme pruritus.

BLADDER-NECK OBSTRUCTION DUE TO NON-MALIGNANT DISEASE OF THE PROSTATE

BY

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There is no doubt that many patients suffering from prostatic obstruction come for treatment late in the progress of the disease. They delay until the kidneys are permanently damaged and secondary cardiovascular changes have occurred. Many lull themselves into complacency by believing that they suffer from "the old man's complaint," for which no treatment is necessary. Doctors are partly responsible for the delay. The diagnosis may be missed, or the seriousness of the condition be not realized. I constantly see cases with the history of acute retention relieved by catheterization. Surgical advice was not sought until further retention developed, and catheterization on this occasion failed. Renal damage occurred between the retentions, and catheterization merely postponed the evil day, so that in the end the patient faced the operation in a poor state of health.

Repeated catheterization in these cases of retention due to bladder-neck obstruction should, except in special cases, have no place in modern treatment. When the expectation of life, from other causes, is short, a trial, however, is justifiable. In a case of acute retention due to prostatic obstruction the wisest course is not to pass a catheter but to give a small dose of morphine and place the patient in the hands of the surgeon. If a urethral catheter has then to be passed it can be done with the most careful asepsis under the best conditions. Infection carried in by the passage of a catheter translates the patient at once to a less favourable class for treatment.

Many patients, and doctors themselves, view the possibility of suprapubic prostatectomy with horror, and delay treatment as a result. Many of its unpleasant features have been removed by the advent of the perurethral operation, but some doctors hesitate to advise that method because the view is current that the obstructing portion of tissue alone is removed. They feel it is only a matter of time before the remaining glandular tissue hypertrophies and further obstructive symptoms develop.

It would not appear to be generally known that perurethral prostatectomy when properly performed results in as complete a removal as suprapubic enucleation, and the prospect of recurrence is remote. "Resection" of prostatic tissue to leave a channel through which urine may pass should be the aim only in malignant cases. I believe that prostatectomy should be performed as soon as the diagnosis of prostatic obstruction is established unless coexisting diseases make the expectation of life short.

Symptoms and Physical Signs

When prostatic obstruction causes retention of urine the diagnosis is easy. When it causes sufficient trouble with micturition to bring the patient to the doctor the diagnosis is generally easy. There are cases, however, in which the urinary phenomena are so slight and their onset so gradual that the patients are unaware of anything wrong with the working of the bladder. These patients seek advice because of general symptoms such as dyspepsia, lack of power of concentration, lassitude, cardiovascular disease, abdominal discomfort, backache, haematuria, etc., and the condition of the bladder-neck obstruction is discovered on routine examination, Relatively young patients, with prostatic bars of fibrous and congenital origin particularly, come into this class.

These cases of silent obstruction can very easily be missed. Abdominal examination may reveal a distended bladder by palpation or percussion, but, on the other hand, the bladder dome may be intraperitoneal and intestine may lie in front of it. The diagnosis in several such cases has been suspected by their medical attendants on observing displacement upwards of the pelvic colon in radiographs taken for suspected gastric disorders.

I should like to emphasize the following method for the detection of such cases, and am of the opinion that they will not be missed if the physician or surgeon, in making his routine rectal examination, examines the patient in the three positions described below. The patient should pass urine before the examination.

First Position : Left Lateral.—The rectum is examined. Careful examination of the prostate is then made. Its size and consistency are noted, any irregularities on its surface discovered by light palpation or, if in the substance of the gland, by deep palpation, and any adhesion to or tethering of the rectal mucosa observed. One examines to discover if the median groove and lateral fornices are present, and, if so, their size. One observes if the upper notch can be palpated, and determines the size of the apices of the lobes.

Second Position : Knee-Chest.—The lumbar curve is exaggerated. The seminal vesicles are palpated and any perivesicular infiltration noted, whether neoplastic or fibrotic.

Third Position : Supine.—The legs are flexed and abducted. A bimanual examination through the rectum is then made. The position of the upper limit of the bladder may be detected by "ballottement," the impulse being transmitted to the rectal finger on the prostate. It is possible by this method to assess fairly accurately the amount of residual urine and the degree of hypertrophy of the bladder musculature.

Frequency by day or night, or both, may be present, and there may be "duplication" of micturition, particularly first thing in the morning. Intermission of the stream, a terminal dribble with a feeling of incomplete evacuation, and urgency are often symptoms. Pain at the beginning of or during the act of micturition may be felt by the patient at the end of the penis or "deep in the bladder-neck," and occasionally along the urethra. If terminal pain is present one should expect some coexisting lesion such as infection, new growth, or stone. Haematuria, initial or terminal, with the passage of clots, is not in my experience a very common symptom. If present one should assume that it is not primarily prostatic unless proved so. These cases require full investigation. The presence of pus in the urine, whether "sterile" or not, should always arouse suspicion. Sterile pus may be present in the urine in a case of uncomplicated prostatic obstruction. This may be due to trauma to the mucosa from overstretching, or from compression as a result of gross hypertrophy of the bladder musculature. It may, however, indicate, and often does, associated lesions such as a stone, growth, tuberculosis, etc. An infected urine in a patient who has never been catheterized should also make one suspicious.

Incontinence may be present, whether due to urgency or to lack of control. General symptoms noted are diminished powers of concentration, failure of memory for recent events, sense of fatigue, diurnal somnolence, loss of appetite, dyspepsia, constipation, dry and muddy skin.

Classification

For diagnostic purposes cases may be divided into three groups.

Group I.—Cases with prostatic symptoms, residual urine present, no neurological lesion, *x*-ray-negative. Hypertrophy of the bladder musculature usually develops as a result of prostatic obstruction. In this way the obstruction is at first overcome. The capacity of the bladder decreases. As the obstruction increases decompensation develops and residual urine is usually present.

Group II.—Cases with prostatic symptoms, no residual urine, no neurological lesion, *x*-ray-negative. These are cases in which compensation has been maintained and gross hypertrophy of the bladder musculature develops. Thus, although there may be a severe degree of bladder-neck obstruction, no residual urine is present. Aseptic pyuria quite often occurs in such cases as a result of trauma to the mucosa, and renal damage may be considerable. In these cases cystometric pressure readings reveal a hypertonic myogenic bladder. Cystograms show a contracted bladder with a crenellated outline. Intravenous urograms may demonstrate dilatation of the upper urinary tract, and kidney function tests show evidence of renal damage. Cystoscopic examination reveals trabeculation of the bladder musculature and direct-vision urethroscopy evidence of a bladder-neck obstruction.

Group III.—Atypical cases with symptoms and signs suggesting coexisting lesions of the urinary tract or central nervous system—e.g., recurrent urinary tract infection, aseptic pyuria, or haematuria. These cases require a very full urinary investigation, including, if necessary, catheterization of ureters for the purpose of obtaining specimens of urine from each kidney, and ascending anatomical pyelograms. Cystometric readings will help one to determine the degree of trouble due to prostatic obstruction when a coexisting tabetic lesion exists.

Clinical Method of Determining Size of Prostate Gland without Cysto-urethroscopy

The hazards of too frequent instrumentation in prostate cases must not be overlooked. The desire to carry out an inflexible routine of diagnostic study by the cysto-urethroscope in all cases before operation is contemplated may be scientifically correct, but will result in making many cases into unfavourable operative risks. It should therefore be avoided if possible. The ideal time for the cysto-urethroscopic examination is immediately before the perurethral prostatectomy, and in those cases judged suitable for suprapubic prostatectomy this examination should not be performed at all unless they come under the heading of complicated cases (Group III). The cysto-urethroscopic examination, with catheterization of the ureters if necessary, should then be made as a set procedure, but could if need arose be followed immediately by a suprapubic drainage. It is my invariable practice, if a cysto-urethroscopic examination has been made and an obstructing prostate is present, to insert a Foley's catheter and not remove it until operation has relieved the obstruction.

As the type of operation to be performed is often determined by the size of the gland, it is important to be able to assess the size without cysto-urethroscopy. The bladder must be empty, so that residual urine does not interfere with the examination, which is best made at the time the residual urine is determined. The patient is examined in the supine position with the legs abducted and flexed. The right index finger is placed in the rectum on the prostate gland and the fingers of the left hand palpate the lower abdomen. On relaxation of the abdominal wall the fingers sink into the pelvis and the prostate gland is thus examined bimanually. The degree of intravesical enlargement can be fairly accurately determined in the majority of cases if the patient is not too stout. The size of the gland is recorded—intravesical 0–4 plus, rectal 0–4 plus.

The Role of Radiography

A straight radiograph of the urinary tract should be taken in all cases. Prostatic, vesical, and renal calculi may be silent. Secondary malignant deposits in the pelvic bones and lumbar vertebrae may be seen.

Intravenous urograms should be taken in cases of Groups II and III, and at one of my clinics this is done as a routine in all cases. One can determine from the cystograms whether a crenellated bladder is present indicative of trabeculation of the bladder musculature, or a gross filling defect indicating a neoplasm. Diverticula may also be seen, and at times the degree of intravesical enlargement of the prostate observed. If the last radiograph is taken after the patient has passed urine the amount of residual urine can be assessed.

Intravenous pyelograms may also give one an indication of the function of each kidney, and any dilatation of the upper urinary tract will be observed. The presence of any filling defects of the pelvis or calices of either kidney may suggest a neoplasm. If there is failure in procuring perfect anatomical intravenous pyelograms in cases of Group III, then ascending pyelograms should be obtained.

Classification of Renal Function

The renal function may be *immediate*, taken on admission; *stabilized*, after vesical drainage for a period up to six weeks; *final*, after many months of suprapubic drainage. The kidney function in this series of cases has been determined by the blood-urea and urea-concentration tests. I have found these of great value, and as a result of observation of cases and their progress I have come to divide renal function into four classes. This classification has helped me to decide the type of operation and the most suitable time for its performance. The *blood urea* is taken before the urea-concentration test.

Urea-concentration Test.—In the first instance no fluids are allowed for 12 hours before starting the test at 5 a.m. If, however, this does not show a Class I kidney function it is repeated after 36 to 48 hours, fluids being taken freely until five hours before the test. Recent catheterization interferes with the urea-concentration test, and 12 hours should elapse before it is taken. 15 g. of urea in 100 c.cm. of water is given at the appointed time. The patient empties his bladder (if a catheter is not *in situ*), and the urine passed (or drained) at hourly intervals for the first three hours is collected and accurately measured in cubic centimetres.

Class I

Blood urea 45 (or under) } 1.5 g. (or more) urea excreted in any 1 hour.
No fluids for 12 hours } Percentage of urea increases with each hour. 3.5 g. (or more) urea excreted in 3 hours.

Class II

Blood urea 45 (or under) } 1.5 g. urea in any 1 hour.
No fluids for 5 hours } 3.5 g. (or more) urea excreted in 3 hours.

Class III

Blood urea 45 (or under) } Urea-concentration test does not satisfy above particulars.

Class IV

Blood urea over 45

Choice of Method of Treatment

Until 1939 I treated practically all my cases by suprapubic prostatectomy. A few were treated by "resection" with McCarthy's resectoscope or Thompson's punch, and some by the perineal approach. The operation of choice was that of Harris, performed either in one or in two stages. In other cases a modified Freyer's operation was used, with destruction of any potential prostatic diaphragm. From 1939 onwards I employed Thompson's punch with increasing frequency, so that in this whole series 82.6% were operated upon by the perurethral route.

It is in my opinion a mistake to use one method to the exclusion of others. Each individual case should be judged on its own merits. Surgeons will vary in their views on choice of operation, depending to a great extent on their relative skill and experience of results with each, and also on whether they have the time, patience, inclination, and nursing staff to persevere with the difficult technique necessary for the perurethral method.

From the surgeon's point of view the perurethral operation is more arduous. It involves the use of a highly trained team, an electrical apparatus in perfect condition, and the performance of delicate manipulations at a distance over a long period in a relatively cramped position. There is no doubt that if a surgeon attempts perurethral prostatectomy without a full training in perurethral operative work and without the above advantages the results can reach only an indifferent standard and the method will fall into disrepute. From the patient's point of view the advantages are immense—the absence of an external wound and of suprapubic drainage, the general comfort, and a rapid convalescence.

There is no doubt in my mind that most cases are best treated by the perurethral route. The lay public have come to this conclusion also, and one has constantly to be on guard lest, against one's better judgment, the patient persuade one to perform a perurethral operation when the suprapubic method offers the best prospects.

There are many factors to be taken into account in the choice of operation. Some of them are as follows:

1. Size of Gland

Removal of the large gland by Thompson's punch is tedious, and if in order to avoid a further operation the surgeon persists longer than one hour, he may shock the patient considerably. The amount of tissue individual surgeons can remove at one sitting with safety varies very much. The maximum I have removed successfully with the present instrument at one sitting is 116 g., but in the hands of some surgeons this amount would appear to be by no means unusual. I feel, however, that multiple sittings are to be avoided if possible, and I prefer to remove these large glands of 80 g. or more by the suprapubic route provided there are no contraindications. The average prostate weighs 30 to 40 g., and thus the majority of cases are suitable for perurethral removal. The size of the gland can be determined before the operation by the method described, and it is thus possible from experience to decide whether the gland can be removed with Thompson's punch in one sitting with ease or with difficulty, or whether it is better removed by open operation.

2. Relation of Kidney Function to Type of Operation

Suprapubic Operation.—From the point of view of renal function it is safe to perform a one-stage prostatectomy on cases with a Class I kidney function. Practically all these cases have a small residual urine, but if it is over 2 to 3 oz. it is my custom to insert a catheter for a week before operation. The operation I perform is that of Harris. Cases in a lower class have urethral drainage in an attempt to improve their class, but if after seven to ten days Class I, or in certain cases Class II, function is not reached, a high suprapubic drainage and Steinach's operation are performed.

The renal function is reviewed again in three to four weeks' time. Many cases will by then have improved their class to I or II, and operation can be carried out. An intravenous drip is begun at the operation in the latter cases. Cases in Class III are a hazard for suprapubic operation, and difficulties are to be expected if any post-operative complications develop. If the patient is a good risk from other points of view the suprapubic method is justifiable, otherwise the gland is better removed by the perurethral operation in one or more sittings, depending on the size of the gland. An intravenous drip is necessary. Cases in Class IV are better operated upon by the perurethral route or discharged with a permanent suprapubic drainage until the final renal function is obtained after several months' drainage. The majority of these cases are suitable for operation by either route at the end of this time.

Perurethral Operation.—Cases with immediate Class I, II, or III kidney function are suitable for operation from the point of view of renal function. In cases of Class IV the bladder is drained by Foley's catheter and the kidney function allowed to improve as a result of the relief of back-pressure and the administration of copious fluids by mouth, and intravenously if necessary. Kidney function tests are repeated at weekly intervals if required, and one finds that the majority of cases rapidly improve their class. Thus a case may be admitted with a blood urea of 250, and after drainage for a few weeks the blood urea may have fallen to normal. Operation is performed as soon as Class II or III is reached. There are some cases, however, which fail to improve, and stay in Class IV after four to six weeks' drainage. They have reached their "stabilized function," and it is unlikely that any major improvement will occur for many months. These cases are often a difficult problem, and treatment will depend on the height of the blood urea and the general condition of the patient. If the blood urea is very high I prefer a suprapubic drainage for four to six months, the tests then being repeated. If the blood urea is only moderately raised I take the risk of operation, an intravenous drip being used after the operation and continued for two or three days or longer until 100 oz. of urine are drained in the 24 hours. Some surgeons operate upon cases with acute retention shortly after admission even though they have a raised blood urea of 100 or under. It is realized that once the obstruction has been relieved and the obstructing tissue removed, the kidney function will improve. In this series of cases this procedure has not been adopted, as the advantages have not seemed great enough to outweigh the disadvantages. It may be noted here that only veins in the upper limbs are used for intravenous drips. Patients are ambulatory at an early period and sepsis in wounds of the lower limb is liable to occur, with dangerous sequelae.

3. Cardiovascular Disease

Cases with cardiac decompensation usually improve rapidly once the chronic uraemia is relieved by urethral drainage. Many cases which would appear hopeless at first prove quite good risks after a few weeks. If fibrillation is present they are digitalized.

The cases which cause anxiety are those with gross hyperpiesia and those with a history of coronary thrombosis. These are preferably operated upon by the perurethral route. It is essential that no shock be permitted to occur during the operation and that the loss of blood be minimal. Once the blood pressure has been allowed to fall it may be difficult to get it back to normal limits, and, although the renal function may be excellent, secondary renal failure develops as a result of failure of the circulation. It is therefore my routine in these cases to have an intravenous drip started by my assistant immediately before or after the spinal anaesthetic has been given. Saline is used at first and plasma later if necessary, and the rate of drip is varied according to the blood pressure. The usual vasoconstrictor drugs are administered even though the patient has hyperpiesia. The operation time is made as short as possible, and several sittings may be necessary to remove a large gland.

The beneficial effect of prostatectomy upon the cardiovascular system is often most striking. Frequently patients previously suffering from angina of effort find that they are able to lead more active lives without this symptom occurring. In cases of hyperpiesia the blood pressure often falls, with resulting increase in the patient's comfort.

4. Coexisting Lesions in the Urinary Tract

(*a*) *Congenitally Narrow Urethra and Urethral Strictures.*—An obstructing prostate complicated by the above conditions should be removed by the suprapubic method. Perurethral surgery is apt to result in the stricture becoming more troublesome afterwards, and this will certainly be the case if the stricture is overstretched. This method should therefore be avoided if at all possible in these cases. If the suprapubic operation is very definitely contraindicated the punch is introduced through a small incision into the bulb of the urethra behind the stricture and a perineal perurethral prostatectomy carried out. In cases with meatal stenosis a plastic operation is performed first, and thus this condition, if existing alone, is no bar to the perurethral operation.

(*b*) *Sepsis.*—If no primary lesion is present in the upper urinary tract, infection usually responds rapidly to sulphonamides, alkalis, and urethral drainage. The case can then be operated upon by the perurethral route in the ordinary way. If for any reason a suprapubic operation is chosen it is performed in two stages.

(*c*) *Vesical Calculi and Non-malignant Papillomata.*—Unless of large size these are not of themselves important factors in determining the approach. If the perurethral operation is judged preferable from other criteria, the calculi are removed by crushing with a cystoscopic lithotrite, or the papillomata either destroyed by coagulation or excised with the punch or McCarthy's electrotome. If time permits the prostate is removed at the same sitting, otherwise a catheter is inserted and the gland removed a few days later. If papillomata have been present the irrigation fluid used is 1/5000 silver nitrate. I have had no cases of implantation growths in the prostatic cavity following this procedure. If the calculi or papillomata are of large size they are treated by suprapubic operation, and the prostate is removed at a later date by suprapubic or perurethral route, depending on the case.

(*d*) *Carcinoma of Bladder.*—The carcinoma is removed first and the prostate at a later date by the suprapubic route. The bladder capacity is small after the partial cystectomy, and operation by the perurethral route undesirable.

(*e*) *Vesical Diverticula.*—These are extirpated in the first instance, and if a prostatic bar is present this is destroyed at the same time by Irwin's clamp. Otherwise a prostatectomy is performed at a later date.

(*f*) *Prostatic Calculi.*—If these are of small size the gland is removed by the perurethral route, but if of large size by the suprapubic.

(*g*) *Lesions of the Upper Urinary Tract.*—Sepsis or urgent conditions in the upper urinary tract often necessitate a preliminary suprapubic drainage followed by treatment of the renal or ureteric lesion. The prostate is removed later, the type of operation being dependent on the factors previously mentioned.

5. Other Factors

There is no doubt that patients who are stout or suffer from bad chests are better operated upon by the perurethral route even though the gland is of large size. Gross varicose veins in the lower limb or a history of spontaneous thromboses are factors which may weight the scales in favour of perurethral prostatectomy. The incidence of thrombosis is very much less after this procedure.

Tables showing the results of treatment, the causes of death after prostatectomy, and reasons for not operating are given on the next page.

Commentary

All deaths are recorded, whether due directly or indirectly to the operation or from coexisting lesions in any other systems having no relation to the genito-urinary tract. All prostatectomies performed at my clinics are included in these results. In later years particularly, cases have been received from other clinics for perurethral prostatectomy as they were considered to be in too poor condition for open operation. The percentage of bad-risk cases is therefore higher than usual.

Statistics are apt to be misleading. One may, for example, deduce that Harris's one-stage prostatectomy and two-stage prostatectomy are the safest operations in view of the fact that no deaths occurred. In actual fact, only good-risk cases were operated upon by these methods, the gland being of large size.

The number of cases given only palliative treatment has been recorded. It includes those admitted to a voluntary hospital and also a municipal hospital, often suffering from advanced stages of various diseases.

In this series no case was rejected in which operation held out the slightest prospect of success. The cases operated upon include those with other diseases of the genito-urinary tract, such as carcinoma of the bladder, kidney, etc., and also diseases of other systems—e.g., carcinoma of the rectum.

Summary

The object of this paper is to show the good results of radical treatment for prostatic obstruction and to urge that these cases be

TABLE I.—*Results of Treatment of 875 Patients admitted with Prostatic Symptoms*

	No. of Patients	Percentage of Total	Admitted with Acute Retention	Mortality Rate
Perurethral prostatectomy ..	621	70·97%	228 (35·11%)	3·7% (23)
Suprapubic prostatectomy ..	131	14·97%	67 (51·15%)	2·29% (3)
Modified Freyer's (2-stage)	49		27	—
Harris's (*a*) 1-stage ..	21		5	—
(*b*) 2-stage ..	61		35	3
Permanent suprapubic cystostomy	94	10·74%	68 (72·34%)	11·7% (11)
No operation	29	3·32%	Transferred to a chronic ward	

Mortality from all causes following prostatectomy is 3·4% in a consecutive series of 752 cases. Mortality of the last 439 perurethral prostatectomies in this series = 2·51%. Of all prostatectomies 82·6% were performed perurethrally, 17·4% by various suprapubic methods. The oldest patient subjected to perurethral operation was aged 90.

TABLE II

Reasons for Leaving Permanent Suprapubic Cystostomies	No. of Cases	Reasons for Not Operating at All	No. of Cases*
Bad renal function (persistent high blood urea)	31	Mentally violent	8
Cardiac disease	17	Cardiac disease	6
Poor general condition	12	Poor general condition ..	5
Intercurrent death	11	Intercurrent death	5
Refused further operation ..	7	Uraemia	2
Other severe disease or senility ..	6	Other severe disease or senility	2
No records	10	Refused operation	1
Totals	94		29

*All these were cases from the municipal hospital.

TABLE III.—*Cause of Death after Prostatectomy*

Cardiac failure, coronary thrombosis, and pulmonary embolism	11
Uraemia	4
Clot retention	2
Cerebral thrombosis	1
Fall in blood pressure after operation	2
Malignant endocarditis	1
Brain abscess following middle-ear infection	1
No records available	4

sent early to the surgeon. A clinical method of diagnosis, to prevent cases being missed, is described in detail. The indication for various types of operation is discussed. The perurethral operation is considered the method of choice. The paper is based upon a series of 875 consecutive cases, of which 752 were submitted to radical operation, with a mortality of 3.4%, 82.6% being treated by the perurethral method.

I wish to express my thanks to the sisters, nurses, and house-surgeons who have worked with me and without whose care and attention these results could not have been obtained. I also wish to thank my clinical and private assistant, Mr. Hadda, for the help he has given me and for compiling the statistics.

PARADOXICAL EMBOLISM

WITH REPORT OF A CASE DUE TO A VENTRICULAR SEPTUM DEFECT

BY

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Various mechanisms have been advanced to explain how an embolus may avoid the lungs and pass from the systemic veins or right heart to the systemic arteries. The earliest explanation of the apparent contradiction to the normal path of emboli was that small ones could occasionally traverse the lung capillaries. This seems very unlikely. Experimental work suggests that even air cannot pass through the pulmonary circulation in harmful quantities. A patent foramen ovale has been present in fatal cases of paradoxical air embolism (Thomassen, 1938) and may have been present in non-fatal cases.

Since Cohnheim (1877) first traced the path of an embolus through an opening in the interauricular septum many such cases have been reported. An anatomically open interauricular septum may be functionally closed because the higher pressure in the left auricle ensures that it is closed by a valve on the left auricular side. Beattie (1925) suggested that this relation might be repressed by the lodging of a pulmonary embolus in the pulmonary artery which raises the pressure in the right auricle and at the same time lowers it in the left auricle because of diminished return from the lungs. A subsequent embolus arriving in the right auricle would be swept through to the left auricle and thence to the aorta. Thompson and Evans (1930) believed that at least one-third of the pulmonary arterial circulation had to be depleted before the right auricular pressure became greater than the left auricular pressure. That this mechanism is a possible one is suggested by the fact that in Wittig's (1927) series 50% of cases of paradoxical emboli were associated with antecedent pulmonary embolism. Some other explanation is necessary for those cases in which pulmonary embolism is absent or minimal. The simplest is that it is entirely fortuitous; a widely patent foramen ovale allows the embolus to pass without the help of pressure changes. Taylor (1934) suggested that shock from passage of a small embolus to the lung may bring about pressure changes which facilitate passage of a subsequent embolus through a patent foramen ovale. There is no experimental confirmation of this. Where the foramen is guarded by a valve Porter (1941) suggested that the embolus coils up over the tricuspid valve and obstructs it momentarily, so that the pressure rises in the right auricle and opens the foramen, allowing the embolus to pass through.

Paradoxical embolism may occur through a patent ventricular septum. If in addition the aorta arises from the right ventricle an easy route is provided for an embolus from a systemic vein to reach the aorta. Two such cases were described by Abbott and Beattie (1923) in which paradoxical embolism of the brain had arisen from septic foci in the arm and abdomen respectively. Only six examples of paradoxical embolism for which a ventricular septum defect was responsible have been reported. Louis (1826), in an article on communications between the right and left sides of the heart, described the case of a man aged 25 years in whom two areas of cerebral softening were found. The ventricular septum was defective at the base. No other cardiac anomaly was present. His description seems to indicate that the patient also had extensive pulmonary tuberculosis, and there is no clear evidence that the brain lesions were not tuberculomata. He did not draw any conclusions from these findings, but embolism was unknown in his day, being elucidated by Virchow only in 1845. Ballet (1880) collected a series of seven cases of congenital heart disease with cerebral abscess. In two of them a ventricular septum defect was the only anomaly. One was Louis's case and the other his own. This was a male of 15 years who died of a frontal abscess. The heart showed a ventricular septum defect with a malposed septum and an aplastic right ventricle. He assumed but did not explain the connexion between the septum defect and the cerebral abscess. Although the state of the peripheral veins is not given, the nasal fossae and cranial bones were normal, and paradoxical embolism seems to have been the probable cause. Stone (1881) reported the case of a female aged 19 years with a large ventricular septum defect and acute endocarditis of the stenosed conus of the right ventricle. She died of purulent meningitis and a cerebral abscess. No comment on the origin of the abscess was made. Hanna (1941), reviewing the 35 cases of paradoxical embolism reported up to 1941, found three (those of Louis, Ballet, and Stone) in which a ventricular septum defect was responsible, and added three of his own. In all six cases embolism was cerebral, and in none was the source of the embolus found.

In the case here reported the embolus consisted of vegetations from the pulmonary valve. It is suggested that they were large enough to lie over the opening in the septum and, when they broke off, to pass through it into the left ventricle. Pulmonary emboli were absent.

Case Report

A boy aged 11 had been blue and dyspnoeic on exertion since birth, and at the age of 6 was found to have congenital heart disease. At the age of 10 he had tonsillitis and cervical adenitis. A moderate amount of haematuria at the time was attributed to the nine days' sulphonamide treatment before admission to hospital, for no evidence of bacterial endocarditis was found. There was a very loud apical systolic bruit, and a basal to-and-fro bruit at the pulmonary area. He was readmitted at the age of 11 with pyrexia, sore throat, and pain in the right leg attributed to acute rheumatism. His temperature was 103° F. It was found that the pain was due to arterial occlusion, and as similar signs were appearing in the left leg a diagnosis of embolism of both common iliac arteries from bacterial endocarditis was made. Haematuria was present, but urinary output

was good. *Streptococcus viridans* grew on blood culture. He died four days later. At the necropsy a large embolus straddled the aortic bifurcation and completely occluded the right and a portion of the left common iliac artery. Recent infarcts were present in the left kidney and spleen. The mitral and aortic valves were normal. A large defect was present in the ventricular septum, but the auricular septum was normal. The cusps of the pulmonary valve could not be identified, and were replaced by a mass of friable vegetations. No infarcts were found in the lung.

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ACTINOMYCOSIS SUCCESSFULLY TREATED WITH PENICILLIN

REPORT OF TWO CASES

BY

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AND

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Actinomycosis is not a common condition, and opportunities for observing the effects of its treatment with penicillin are consequently infrequent. Roberts *et al.* (1945) record two cases of thoracic actinomycosis. One of these patients died from *Ps. pyocyanea* pyaemia after a week's treatment with penicillin; the other relapsed after one course of treatment (1,800,000 units administered systemically in 15 days), but recovered after a further course of treatment (200,000 units daily for 28 days). Hendrickson and Lehman (1945) record two cases of cervico-facial actinomycosis successfully treated with penicillin. In one case 2,000,000 units of the drug were administered in 16 days; in the other 1,500,000 units in 15 days. In a case treated by Macnab (1945) (daily intramuscular injections of 100,000 units for 10 days) penicillin had no apparent effect on the course of the disease.

We record below two cases of cervico-facial actinomycosis in which treatment with penicillin resulted in clinical cure. In one of these (Case 2) the history and physical signs pointed to the development of the lesion in the tonsillar lymph gland. There was no apparent actinomycotic lesion of the mouth or throat, but presumably lymphatic infection occurred through the tonsillar region. The occurrence of actinomycosis in lymph glands has been denied by some observers, and recently by Macnab (1945), but has been accepted by Cope (1938), who depicts actinomycotic lesions in photomicrographs of lymph glands.

Case Histories

Case 1.—A linotype operator aged 35 was admitted to hospital on May 15, 1945, with a large, brawny, smooth, painless, semi-fluctuant swelling situated over the inferior ramus of the left mandible. The swelling was ill defined, and extended upwards over the anterior border of the masseter muscle and downwards for a short distance into the submaxillary triangle. One enlarged lymph gland was felt at the anterior border of the sternomastoid. There was marked caries of the teeth. The lesion had apparently started 14 days before admission as a "gumboil" over the left lower jaw. Three teeth had been extracted on May 12. The lesion was incised and pus evacuated on the day of admission.

Case 2.—A railway porter aged 15 attended as an out-patient on May 31, 1945, with an enlarged right tonsillar gland, showing periadenitis and tenderness. He gave a history of a swelling in the right side of his neck a year before, which had soon disappeared. Nine weeks before admission he developed a sore throat, and the swelling in the neck reappeared and showed no tendency to diminish in size. Both tonsils were grossly enlarged and almost touching; the teeth were healthy, although some had been extracted a year and a half previously. He was referred to Dr. Seex, who removed his tonsils by dissection on June 4. He was readmitted to hospital on June 14 with a brawny swelling of the neck, the inflammation now being definitely extracapsular. This was treated with ichthyol-and-glycerin foments, and was incised on June 22. Thick greenish pus was evacuated, and a rubber dam drain was left in the large abscess cavity.

Bacteriology.—The pus from both cases contained streptothrix filaments. These organisms failed to grow under aerobic conditions in primary cultures and in subcultures. In glucose-agar shake-cultures there was no growth in the upper centimetre of the medium, and growth was maximal in a zone situated one centimetre below the surface of the medium. Growth occurred under anaerobic conditions but less readily than under micro-aerophilic conditions. Microscopical examination of the pus from Case 1 showed scanty Gram-positive cocci as well as streptothrix filaments, but the cocci failed to grow in aerobic and anaerobic cultures, and were presumably non-viable. Only streptothrix filaments were noted in the pus from Case 2.

Dosage of Penicillin and Method of Administration.—In both cases penicillin was administered systemically by intramuscular injection. During the first half of the course of treatment the dosage was 33,000 units every three hours; thereafter the dosage was reduced to 25,000 units every three hours. There was a gradual diminution in the size of the lesion, and treatment was continued until the discharge had ceased and the lesions had markedly diminished in size. Case 1 received in all 5,800,000 units of penicillin, and Case 2 5,200,000 units.

The patients were re-examined a month after discharge from hospital. In both there was slight thickening of the tissues at the site of the lesion but no evidence of an active inflammatory process.

Discussion

Different strains of *Actinomyces bovis* vary in their susceptibility to penicillin. Of five strains examined by Garrod (1944) and compared with the Oxford H strain of *Staphylococcus aureus*, two strains showed approximately the same degree of sensitivity as the standard staphylococcus; a third strain was eight times as resistant; a fourth strain four times as resistant; and a fifth strain grew sparsely and atypically in 16 times the concentration of penicillin tolerated by the staphylococcus. The patient from whom this fifth strain was isolated was not treated with penicillin.

Fibrous-tissue formation is an outstanding characteristic of the pathology of actinomycosis—its amount and maturity varying with such factors as the age and site of the lesion, the resistance of the patient's tissues, and the virulence of the infecting organism. The amount of fibrous and granulation tissue, and its age, affect the vascularity of the lesion and the flow of blood through it, and consequently the permeation of the lesion by penicillin in the blood and the concentration of the drug attained in different parts of the lesion. Further, actinomyces may show a considerable degree of latency, and relapse may occur a long time after apparent cure (Cope, 1938).

Local treatment could not be applied in the two cases here described, and the relatively high dosage of penicillin administered systemically and the duration of the treatment were based on the response to treatment and on the above considerations, which seem to indicate the need for high dosage and a prolonged course to ensure success in the treatment of this disease with penicillin.

The results obtained strikingly demonstrated the curative effect of penicillin, but more prolonged observation of the patients will be required to ensure that no viable actinomyces capable of proliferation remain embedded in the tissues.

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The first two of the lecture-demonstrations arranged by the British Medical Students' Association for its members in the London Region have now taken place. Mr. Claud Mullins opened the series with a talk on "Medicine and the Magistrates' Courts," and many students have since visited his court to see a demonstration of some of the points he made. Prof. E. Hindle gave an address on "The Prosectorium of the Zoo," and later conducted a party round the Zoological Gardens and the post-mortem department to demonstrate the investigations made into the physiology, anatomy, and pathology encountered among the animals. Details of future talks and visits (open to members of the Association only) may be obtained from the B.M.S.A. secretary at B.M.A. House, Tavistock Square, W.C.1.

Medical Memoranda

Torsion of Omentum

The following case is felt to be worth recording because of the rarity of the condition.

History of Case

The patient, a man aged 23, was admitted on April 7, 1943, as a case of acute abdomen. Four days previously he felt acute pain in the upper part of the abdomen, which became more severe round the umbilicus, later localizing itself in the right iliac fossa; there was no vomiting and the bowels had moved well before the onset of pain. Three months earlier he had had similar pain starting round the umbilicus, accompanied by severe vomiting, and was treated in a general hospital. The attack lasted over 10 days. He does not remember whether the pain was localized in the right iliac fossa, and if so, whether there was any tenderness or rigidity.

On admission the patient looked very ill; he was emaciated and exhausted, with cheeks drawn in. In spite of his condition he walked up to the hospital M.I. room, and from there to my consulting-room. Temperature 99.6°, pulse 84, and respirations 19; general condition poor. The scaphoid was more or less fixed, with very limited movements on respiration; a lump could be seen in the right iliac fossa; superficial reflexes were dull in the upper part, absent in the lower. A definite mass was felt in the abdomen in the region of the caecum; the abdominal wall was rigid, hyperaesthetic, and tender, with no fluctuation—suggestive of local peritonitis. Rectal examination revealed a hard tender mass. The tongue was dry and furred; lungs and heart—nothing abnormal. The provisional diagnosis was acute appendicitis. Blood examination showed: R.B.C., 3,750,000; W.B.C., 9,800 (polymorphs 77%). Urine examination revealed nothing abnormal.

Treatment.—After premedication with morphine and atropine, spinal percaine analgesia was given. As the patient lay flat on the table a definite lump (mound) could be seen on the right side in an otherwise scaphoid abdomen. The abdomen was opened by McBurney's incision in the right iliac fossa; the peritoneum was incised very cautiously, as free pus was expected, but there was none. Instead of pus a large mass of dark cherry-red colour was

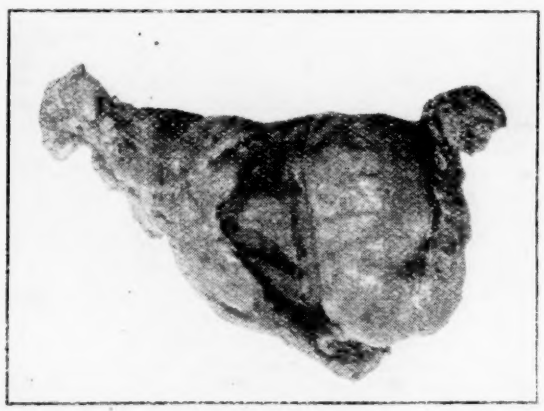

Photo of specimen, showing the twist, the finger-like process, and the mass of omentum. (A piece was removed from the middle for histological examination.)

seen, with a finger-like process closely adherent to it, giving the appearance of a "gangrenous appendix with a mass." When the finger was put in, the whole mass could be moved about freely, and thus was brought out; it was the terminal portion of the omentum, which had twisted on itself, its size being that of a tennis ball. Luckily it was not adherent to any of the viscera. Between clamps the mass was removed and the proximal end was firmly ligatured. The caecum was then examined and found to be normal and healthy; so was the appendix, which was in the retrocaecal position. The appendix was, however, removed as a safeguard against any future attacks. After thoroughly mopping the abdomen the cavity was closed. Recovery was uninterrupted and convalescence very rapid. On April 16 (ninth day) the stitches were removed and the wound had healed by first intention.

The specimen was sent to the pathological laboratory, where it was examined by the Consultant Surgeon and the Assistant Director of Pathology, Paiforce, macroscopically and microscopically. The diagnosis was confirmed as torsion of the omentum.

Comment

The condition has not been, and cannot be, diagnosed before laparotomy. Nearly always the pre-operative diagnosis is acute appendicitis. The caecum and appendix, though in the vicinity, are not affected at all. Treatment is simple.

None of the surgeons to whom I talked about this case could recollect having ever come across a similar condition in their own extensive experience, though most had seen bottled specimens in the museum. I can therefore at least claim to have a first-hand knowledge of the condition, as seen in the natural state.

What the actual cause is cannot be definitely stated. It may be some sort of exertion—the patient gave a vague history of having done some P.T. on the morning of the attack—or thrombosis of the vessels (in this case the vessels were thrombosed). But whether the thrombosis preceded the twist or followed it is not known. As I am out in the desert and have no access to any literature, I am afraid it is not possible for me to say anything more on this interesting subject.

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Major, I.M.S.

Treatment and End-results of Acute Appendicitis

Opinion is almost unanimous that for acute appendicitis while the disease is still limited to the appendix the treatment of choice is appendicectomy without drainage of the abdomen. When peritonitis is established surgeons have been sharply divided in opinion since Ochsner (1906) and Sherren (1905, 1925) advocated conservative measures in late cases. The availability of blood plasma and the sulphonamide drugs has done so much to improve the end-results of operation that it is difficult, with the sole exception of certain localized abscesses, to justify conservative treatment. Since it is among cases of general peritonitis that the mortality occurs, detailed considerations will be limited to that group.

Sulphonamide Therapy.—The sulphonamides are unnecessary except in cases of general peritonitis. While plasma transfusion is in progress, a pre-operative injection of 2 g. of soluseptasine is given intramuscularly. At operation 15 g. of sulphanilamide powder is inserted intraperitoneally, followed by 1 g. intramuscularly at four-hourly intervals and a further 1 g. by mouth if necessary. I prefer sulphanilamide powder intraperitoneally because of its rapid absorption. Most help appears to be required in the first two days after operation; the peritoneum then seems to be able to look after itself. The general condition of the patient and the passage of flatus appear to be safer guides in gauging the dosage and duration of the course than the temperature chart. There have been no toxic manifestations, and operation on two cases a year later leaves one with the impression that adhesion formation may be diminished after its use.

Drainage.—Extensive drainage has great advantages in severe cases. A split rubber tube (split to pubis) from the pelvic floor is essential in almost all cases. In addition, a strip of corrugated rubber is brought out through the wound from the appendicular bed; and in a desperate case a tube in the subhepatic pouch has the advantage of draining the abdomen before the patient has recovered sufficiently to assume the Fowler position. It may be of value in avoiding a subphrenic abscess.

After-treatment.—The most important and most neglected after-treatment in all cases is the passage of a flatus tube every three hours. Should a severe ileus develop, aspiration of the stomach, eight-hourly morphine injections, and plasma transfusion give results far superior to those of any form of "stimulation" therapy and render doubtful procedures like ileostomy unnecessary. Convalescence is often slow and anxious: many cases required five weeks in bed.

End-results.—In a series of 200 consecutive personal cases of acute appendicitis there was one death. That was due to peritonitis. No cases have been rejected on account of severity of disease or delay in diagnosis. The results are summarized in Tables I and II.

Table I

Total cases of acute appendicitis	200
Acute appendicitis without peritonitis	164
Localized abscess (7 drained—2 pelvic in site)	15
General peritonitis (one death)	21

Table II.—*Duration of Disease in Peritonitis*

Duration	Cases	
1–12 hours	1	
13–24 ,,	0	
25–48 ,,	2	
49–72 ,,	10	
4–5 days	4	(1 death; boy aged 16)
5–6 ,,	2	
7–8 ,,	2	

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Reviews

FEMALE UROLOGY

Gynecological and Obstetrical Urology. By Houston S. Everett, M.D. (Pp. 517; illustrated. $6.00 or 33s.) Baltimore: The Williams and Wilkins Company; London: Baillière, Tindall and Cox. 1944.

This is a "different" book: different because it comes from a medical school that is itself in some ways "different."

Gynaecology in Johns Hopkins Hospital is a subdivision of surgery; it has never united with obstetrics to form a specialty of its own. One consequence of this has been that workers in the department of gynaecology undertake investigations and treatments that would usually be regarded as outside the scope of the specialty. This trend is seen in the development of the now famous Female Urological Clinic. Howard Kelly, founder of the Gynaecological Department, made female urology a special interest. His work received world-wide recognition. With Burnam he wrote a treatise on this subject which is still one of the great books of reference. Kelly's assistant, G. L. Hunner, later assumed control of the urological clinic, and over a long period of years maintained and added to its renown. Recently the control has again changed hands; and the present director, H. S. Everett—for many years Hunner's assistant—has now undertaken the considerable task of writing a new comprehensive textbook on female urology which includes a full description of the methods that have come to be particularly associated with his hospital. Because he has been trained in gynaecology, and now works in association with other gynaecologists, he approaches urological problems from an unusual (but natural) standpoint.

The writing is clear in style (if at times a trifle verbose), the illustrations are numerous and of excellent quality; printing errors and wrong positioning of illustrations (so common in first editions) are almost absent. The bibliography is extensive, though comparatively sparse in regard to European literature. The curious reader naturally turns to those chapters dealing with the special methods developed by Kelly and Hunner, and he is fully rewarded. An excellent description is given of the Kelly direct (air) method of cystoscopy and ureteral catheterization. The ureteral "stricture" of Hunner, and its special treatment with wax-moulded bougies, are fully described. The pathology and treatment of interstitial cystitis (the "elusive" ulcer of Hunner) are convincingly presented.

This book merits high praise. Where the teaching is orthodox the descriptions given are excellent; where unorthodox, the disputed opinions are presented with a care and restraint that claim from the reader serious thought and consideration. The publication will make a strong appeal to both urologists and gynaecologists. It bridges the gap that exists between the two specialties.

X-RAY EXAMINATION OF THE UPPER ALIMENTARY TRACT

X-ray Examination of the Stomach. A Description of the Roentgenologic Anatomy, Physiology, and Pathology of the Oesophagus, Stomach, and Duodenum. By Frederic E. Templeton, M.D. (Pp. 516; illustrated. £3.) Illinois: University of Chicago Press; London: Cambridge University Press.

X-ray Examination of the Stomach, by Frederic E. Templeton, has a wider range than its main title indicates, for it includes the pharynx, oesophagus, duodenum, and diaphragm. It is a book of some 500 pages and nearly 300 illustrations. The reviewer would like to make it clear that, whatever criticisms follow, this is a book of first importance and it contains a wealth of information on the subject.

After describing his own apparatus—a fairly standard American tilting-table set—the author gives the details of his technique of investigation. This is an excellent survey of a modern technique, but a note of unreality is introduced by the suggestion that excess of resting juice in the stomach should be removed, as a routine measure, by aspiration and lavage. Does Dr. Templeton really achieve this in his own practice? If so, the American patient must be more long-suffering than the British. The chapter on the anatomy and physiology of the oesophagus is exceptionally good and gives a full account of the mechanism of swallowing. It includes a description of the author's method of demonstrating the pharynx filled with barium. The difficult and still unclarified subject of gastritis is discussed in great detail, and here the author shows a commendable reserve in his conclusions. In dealing with peptic ulcer the appearances of the ulcer crater are considered with profusion of detail, which makes certain omissions the more astonishing. Pyloric obstruction is not described, nor is organic hour-glass contracture. Arterio-mesenteric duodenal ileus finds no place in the index, or in the text. This patchiness is evident later on in the book, when the chapter on the stomach after operation proves to be full and informative, while that on the diaphragm is very meagre. Indeed, the description of Petit's eventration would, if given by a D.M.R. candidate, seriously endanger his pass mark.

In a book that contains much that is good it is a pity that one should, in the search for the good, have to wade through such an irritating *non sequitur* as the following (p. 285): "There can be no doubt that the crater is the most important single factor in the diagnosis, for the ulcer is the crater. It can, therefore, be considered the primary anatomic change." Again, in discussing a superficial peptic ulcer the author says, of "faint persistent rounded collections of barium," seen on compression of the bulb, that "the rapid disappearance under medical ulcer management left grave doubt as to whether an ulcer actually existed. That an ulcer did exist is suggested by the quick response of the clinical symptoms to the treatment." Throughout the book a praiseworthy accumulation of accurately noted facts is interlarded with ambiguous redundancies like the above; but if the reader is prepared to work hard and ignore the irrelevances he will be well rewarded, for there is much meat in the volume. One last word: the illustrations are well chosen and beautifully produced.

LEGAL MEDICINE

Medical Jurisprudence and Toxicology. By John Glaister, D.Sc., M.D., F.R.S.Ed. Eighth edition. (Pp. 691; 222 illustrations, 89 in colour. 30s.) Edinburgh: E. and S. Livingstone. 1945.

This eighth edition of Glaister should have appeared even earlier, but unfortunately much of the work was destroyed by fire and had to be repeated. Since the seventh edition was published in 1942 many changes in the book have been made. A good deal of new matter has been added, particularly concerning the procedure of courts of England and Scotland, the law of cremation, asphyxia, the identification of firearms and projectiles, head injury and insensibility. The section on the presumption of survivorship has been taken as far as the Court of Appeal's decision in the Grosvenor case; but the exhaustive judgments of the House of Lords, which reversed the decision by a majority, were delivered after the book was in print. Prof. Glaister adds another interesting case concerning two brothers who were found dead together, one having gassed himself suicidally, and the other having died by accident through the escape of the gas.

The section on divorce for insanity has been brought up to date by consideration of the Safford case, with its decision that absence on licence from a mental hospital does not interrupt the patient's detention. New also in this edition are remarks on the proposed social insurance system, the condition known as "immersion foot" (which has somehow escaped the compiler of the index); the effect of crush injury on the function of the kidneys; the Rh factor in the blood which underlies erythroblastosis foetalis; agglutinogens in saliva; and the management of the property of persons of unsound mind. Some of the new poisons developed during the war, and the sulphonamides, have found their way into the toxicological section. The section on alcohol has been amplified by a table showing the relation between the consumption of whisky, wine, and beer and the alcohol content of the blood; also a description of the method of Kozelka and Hine for estimating blood alcohol.

The eighth edition contains 90 more illustrations than the last. Of the total, 120 pictures are new and 89 are in natural colour—an important new departure and by no means an easy task in these days. From one or two hints in the preface it is clear that the appearance of this new edition at all represents a triumph over a series of extremely difficult circumstances. That its excellence should surpass that of the previous edition is

an achievement of the apparently impossible. Prof. Glaister, with one or two other noted contemporaries, deserves much credit for having produced, in a country conspicuous for its neglect of medical jurisprudence, a standard textbook that will rank with any in the world.

Notes on Books

Dr. RICHARD EAGER, consulting psychiatrist to the Royal Devon and Exeter Hospital and late medical superintendent of the Devon Mental Hospital at Exminster, has written a small historical work *The Treatment of Mental Disorders (Ancient and Modern)* to commemorate the centenary of the building of the Devon County Lunatic Asylum in 1845. It is published at Exeter by W. V. Cole and Sons and distributed in London by H. K. Lewis and Co., price 7s. 6d. Friends of the institution with which Dr. Eager was so long identified will be glad to have a copy of this book, and it should find many other readers.

The third edition of W. E. BRAY'S *Synopsis of Clinical Laboratory Methods* (Henry Kimpton; 25s.), in spite of additions necessitated by the advances of the past six years, remains of pocket size, owing to the use of small type and the terse presentation conforming to the first word of its title. The author is professor of clinical pathology in the University of Virginia, and the text follows standard American practice: some doubtless useful tests are described with which we are not familiar, and on the other hand there is no mention of tellurite media for cultivating diphtheria bacilli. All branches of clinical pathology are dealt with, and the instructions given, though brief, should enable the user to set about examinations with which he is unfamiliar.

The second edition of *Handbook of Diagnosis and Treatment of Venereal Diseases*, by Dr. A. E. W. MCLACHLAN (E. and S. Livingstone; 15s.), contains 6 pages more than the first; the main addition is a more up-to-date account of the treatment of early syphilis, including the "20-day" and "7-week" methods and the use of penicillin. In addition, neo-halarsine is mentioned, and the sections on the causes of false positive serum reactions and on jaundice have been brought up to date. Many of the errors occurring in the first edition have been corrected, but "*symtomatic*" (p. 81) remains, and instances of plural nouns with singular verbs, and vice versa, still occur. The purist reader will carp at "the serology is positive" and "serological changes in the C.S.F.," while nowadays few syphilologists put much faith in the "provocative" W.R. or the Kahn verification test. The fact that a second edition has been produced so soon after the first is evidence that this excellent little book is being read widely.

Thirty-seven years ago the first edition appeared of a book, *Hey Groves' Synopsis of Surgery*, which has proved its value to the surgical student through its eleven subsequent editions. Now Hey Groves is dead, and the editorship of his *Synopsis of Surgery* passes to C. P. G. Wakeley, though the revision of the twelfth edition had been almost completed by the original author. Fittingly his portrait appears as a frontispiece to this edition. The general character of this book is so well known as to need no description; to bring the material up to date paragraphs have been added concerning the use of penicillin and the sulphonamides, and some notes on radium therapy. Despite these commendable additions to keep the book abreast of new developments we cannot help feeling that a book first written so long ago, and so excellent for its purpose at that time, now needs more than an occasional patching up as new editions are prepared. The synopsis really requires, to use a much-abused word, complete rehabilitation. It is published at 25s. by John Wright and Sons, of Bristol.

The National Association for the Prevention of Tuberculosis (Tavistock House North, Tavistock Square, W.C.1) has published at 5s., under the title *Pathways in Aftercare*, a report of the discussion on after-care and re-ablement for tuberculous patients, held in London last July. The conference was attended by many industrial managers, representatives of local authorities, specialist doctors, and welfare workers. The booklet gives a verbatim account of the speeches just as they were delivered, and it is hoped that their appearance in print will promote a free circulation of ideas on one of the gravest health problems of to-day.

The *Irish Medical Directory and Hospital Year Book, 1945*, is published in Dublin by the Parkside Press Ltd. (10s. 6d.). This, the eighth edition, has been produced in royal octavo size, a change which makes it easier to handle and more convenient for bookshelves. The need to reset the type from end to end has given an opportunity to carry out extensive revisions. The volume opens with a few pages of general information. Then follow eight special articles, each by an authority on his or her subject; these, with one exception, are clinical. Next comes the Medical Directory for Eire, well set out alphabetically in double columns, with other classified particulars useful to medical practitioners and officials. The Hospital Year Book and Index to Hospitals completes the volume, which runs to 300 pages of text and advertisements. Altogether a very handy work of reference.

We have received from the American Library of the U.S. Office of War Information (1, Grosvenor Square, London, W.) a reprint of the symposium on fractures and dislocations originally published in the *Surgical Clinics of North America* for February, 1945 (W. B. Saunders Company, Philadelphia and London). This symposium, to which fourteen surgeons contributed, was held at Chicago under the direction of Dr. Fremont A. Chandler.

Preparations and Appliances

HEATED CARRIER FOR TRANSPORTING PREMATURE BABIES

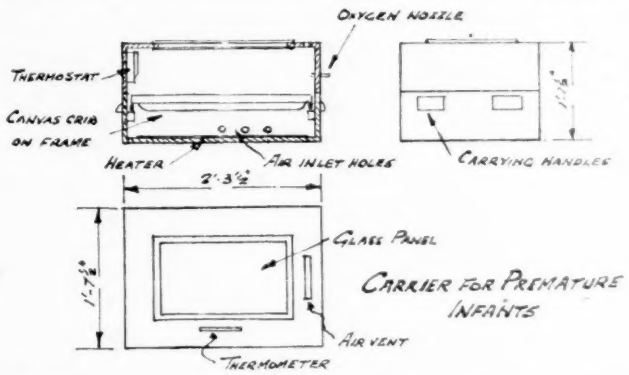
Dr. J. N. O'REILLY, M.R.C.P., writes from St. Helier County Hospital, Wrythe Lane, Carshalton, Surrey:

The difficulty of maintaining the body heat in a newborn premature baby is well known, and many devices have been developed to cope with the problem in hospital. Chilling is one of the principal causes of death of premature babies born on the district and subsequently transported to hospital for treatment. Various forms of heated carriers have been devised, principally in America, but most of them suffer from being over-elaborate and containing materials unobtainable in wartime.

A description is given here of a heated carrying-box designed and made by the hospital engineer, Mr. L. Selleck. The box is kept in a warm room in the maternity department, and when a request for the admission of a premature baby is received the interior is heated by means of hot-water bottles. The box is then placed in the ambulance and the heat is maintained by plugging into the ambulance batteries. On arrival at the patient's house the box is carried into the house and the baby is placed inside. In this way the infant is transported in a draught-free heated atmosphere of uniform temperature and with the minimum of handling.

Since the use of this box the condition of the babies on arrival in hospital has been much better than previously.

The carrier is a box made in halves and hinged together, the top half being fitted with an observation window. A changeable canvas crib is mounted on a frame supported on springs at



CARRIER FOR PREMATURE INFANTS

the top of the lower portion of the carrier. Ventilation is provided by means of a number of holes in the sides under the crib, and by a slot in the cover. The air is warmed by means of an electric resistance heater and automatically maintained at a temperature of approximately 80° F. by the inclusion of a thermostat, the increased temperature of the air causing a continual air charge by convection. In addition to the thermostat a thermometer is embedded in the cover beside the observation window, with the bulb inside to give a visual indication of the temperature. Oxygen can be administered through a nozzle inserted at the end of the carrier, the inner end of the nozzle being splayed to give adequate distribution. The electric heater is of ample surface and so designed that the temperature of the element does not exceed 100° F. when operating on the 6–12-volt circuit provided by the ambulance battery.

The carrier is being further developed to design an incubator for premature infants. In this instance autocontrolled humidity will be available in addition, and facilities incorporated for easy manipulation. The heater will then also be designed for mains voltage.

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WILL THERE BE AN INFLUENZA EPIDEMIC?

The possible intensity of the usual winter rises in the incidence of infectious diseases attracts attention in the autumn. This year interest is naturally focused on influenza, and there seems to be a general fear that the expected seasonal rise may be of epidemic proportions. Knowledge of the periodicity of influenza is imperfect; it is, of necessity, based on mortality, as the incidence of the disease is not recorded. It is known that the mortality varies much in different outbreaks, and the apparent irregularity in the spacing of large epidemics may be due in some measure to the use of deaths as the criterion of the size of the outbreak; it is possible that in some years influenza may be very prevalent but the case fatality very low. During the inter-war period a heavy mortality from influenza occurred at intervals of two to four years, and on this criterion the years when the disease reached epidemic proportions were 1922, 1924, 1927, 1929, 1933, and 1937. The deaths recorded in England and Wales in these years varied from 17,122 in 1937 to 29,084 in 1929, while in the intervening non-epidemic years the annual deaths ranged from 5,019 to 13,211.

The unusually long interval since the appearance of a large epidemic does increase the probability that an outbreak of more than average severity is due. The knowledge acquired in the pandemic of 1918, which caused 112,229 deaths in 1918 and 44,801 deaths in 1919, adds still further to the necessity for taking precautions against a major outbreak. Among the various contributory factors held responsible for the large mortality in the winter of 1918, the unusual time of the original outbreak and the great amount of overcrowding, combined with the fuel shortage, were generally agreed to be of prime importance. The first of these factors must remain an unknown quantity until an outbreak occurs, but the other two, if they do exert pressure on the course of epidemics, are now potential dangers. Overcrowding is certainly much worse than it was at the end of the war of 1914–18, and although it is not easy to assess the relative position of the fuel shortage in the two wars it is certain that the present outlook—and the immediate future—is a bit bleak. One must, too, take into account the belief held by some that the long period of minimum rations has already impaired the nation's power of resistance to infection.

If the trend of influenza could be predicted with any accuracy from these factors alone, then the outlook would be unpromising. But influenza does not run true to form—or, rather, we do not yet know just what the form is. Despite the spate of papers turned out by the press after the last pandemic, and the vast amount of work done before and since, our knowledge of the mechanics of the disease is more vague than exact. The shape of the epidemic curve in one area is very similar year by year, although the start of the outbreak may differ in time by some weeks. A comparison of big outbreaks shows that the disease runs a similar course in various parts of the world. The size of the seasonal rise is determined to a large extent by the time of commencement. In England and Wales, as a whole, the seasonal rise begins early in the year, and the outbreak exhausts itself by the end of the first quarter. In a large city it seems that if the foci of infection can develop early the disease will spread right through the community, but if the outbreak is delayed then the disease is generally not so widespread and may die out before some areas have been invaded. Twice during the war the probable course of an influenza epidemic has confounded the prophets. In the early period it was thought that the ideal setting for influenza to assume epidemic if not pandemic proportions was provided by the conditions of work over long hours, often in the black-out, with little or no ventilation, and by the conditions of life due to air-raids, nights spent by people crowded in a deep shelter or exposed to cold and damp in an Anderson or surface shelter. It was also feared that food rationing, particularly the scarcity of protective foodstuffs, might raise the incidence of nasopharyngeal infections by lowering resistance. But no large outbreak occurred; in fact the usual seasonal rise was below the average. The numbers of deaths in the great towns were 5,510, 2,993, and 1,544 during 1940–2, compared with 8,341 deaths in the last epidemic year of 1937. The next occasion for misgiving was in the autumn of 1943, when influenza began to rise sharply some two months before the usual date. During the 49th and 50th weeks there were 2,263 deaths in the 126 great towns, compared with 50 to 72 deaths in these weeks during the preceding four years. From this date the outbreak subsided quickly and had practically died out by the time the usual maxima occurred. Although the number of deaths in the great towns was slightly larger than the number in the preceding wartime outbreaks the epidemic was notable only for its freakish appearance in time.

To predict an influenza outbreak, especially its severity, is not possible. An attack of some notifiable diseases confers immunity, and there is some kind of equilibrium of susceptible persons in the population; the more the equilibrium is disturbed by increasing the number of susceptibles the greater the epidemic that follows. This indication of the possible size of an outbreak is denied us in the case of influenza. In the first place the numbers attacked are unknown, and, secondly, it is doubtful whether an attack of influenza has any effect on the chance of contracting the disease during a subsequent outbreak. The evidence whether an attack of influenza confers any lasting immunity is conflicting; instances have been quoted in which those attacked in one epidemic escaped very lightly in a later outbreak compared with those who were unattacked in the first. Other experiences have shown the reverse—i.e., those attacked in the first outbreak suffered more severely in the subsequent epidemic. From the periodicity of influenza and the general environmental conditions now prevailing the odds would appear to be weighted in favour of an outbreak of epidemic proportions in the spring. It

is not likely that the level of 1918–19 will be reached, since the last two great pandemics of 1889–90 and 1918–19 had a summer epidemic; we therefore have no reason to suppose that a pandemic will first appear in the winter.

HOSPITAL NURSES: A NEW DEAL

The seriousness of the nursing shortage has led the Government to inaugurate a campaign to attract nurses and domestic workers to hospitals. The number of women needed for the present nursing services of the country—not hospitals alone—is about 240,000, and the Ministry of Health has stated that on the basis of notified vacancies there is a shortage of something like 34,000 nurses, mostly in hospitals; there are also immediate vacancies for 12,000 domestic workers in hospital, mainly women. Many wards and even some institutions have had to be closed because staff was not available. This does not mean that there is a fall in the rate of recruiting for nursing, or that present numbers are not being maintained; it means that the demands for nursing service in many fields, including school and industrial nursing, are continually growing, and are likely to grow still more with the coming of the National Health Service, bringing about, as it must, a reshaping, and to some extent an expansion, of hospital resources.

The question of domestic workers in hospitals is closely bound up with the nursing question, for there can be no doubt that one reason for the shortage of nurses is that they are required to spend so much time in domestic work, to the disadvantage of the training they had hoped to receive and their prospects of professional promotion. This is probably one of the reasons—no doubt there are others—why so many candidates for the nursing profession fail to stay the qualifying course. Other reasons are the relatively low pay and the restrictive conditions under which nurses have had to work. They have been subject to a discipline which does not apply to other professional women.

The Government has frankly recognized the position. A publication entitled *Staffing the Hospitals: An Urgent National Need*[1] has been issued by the Minister of Health, the Secretary of State for Scotland, and the Minister of Labour. The proposals which it announces for a new standard of nurses' pay and conditions of service put into effect recommendations of the Athlone and Alness Committees; they are also an endorsement of a number of suggestions put forward in a recent memorandum by the Socialist Medical Association. It is, of course, admitted that whatever is done now to improve the nurse's lot will make little difference to the immediate situation: it will not produce nurses by magic to deal with a serious epidemic should such a calamity arise this winter. Emergency arrangements are being made in view of such a possibility. The military authorities have agreed to release 2,000 suitable members of the Women's Auxiliary Services who will volunteer for training as nurses; these will be released under the demobilization Class B, as will also 1,000 women with experience of institutional cookery who will accept employment as hospital cooks. It may be hoped that with the demobilization of large numbers of women from the Services in Class A many of these also will be attracted to a nursing career. There has not been, and apparently is not to be, any "direction" to nursing. The "directed" person is liable to be an unsatisfactory occupant in any sphere, and especially so in nursing.

Two general codes have been worked out by the Government and representatives of all the organizations and interests concerned: one of them for the conditions of service of hospital nurses and midwives, and the other for those of hospital domestic staff. They are offered as the reasonable minimum to be aimed at in all hospitals. Of the improvements proposed some are already in effect in progressive hospitals; some can be brought into operation at once; but others, such as the requirement that nurses shall be free from all domestic work in hospital, obviously depend upon the sufficient recruitment of domestic staff; and others again, such as the accommodation in nurses' homes, must await building labour and release of materials. But it is laid down that it should be the aim of every hospital authority to institute immediately, or as soon as may be, such of these conditions as are attainable in present circumstances and are not already in force.

The first section of the nursing code relates to training. It states that nurses undergoing training should be regarded primarily as students. Training schools should have a preliminary training school—perhaps for more than one hospital—in which the student or pupil assistant nurses would have preliminary instruction before entering the hospital ward. Salaries should be in accordance with the agreed recommendations of the Nurses and Midwives Salaries Committees. The Nurses Salaries Committee for England and Wales has recommended the following scales: Ward sisters, £160–£260; staff nurses, £120–£180; assistant nurses, £90–£160, in all cases excluding the value of board, lodging, and other emoluments, which in the case of ward sisters is computed at £120, and in the case of the other grades at £100. These figures are from £40 to £60 above the existing minimum. Salaries for nurses in sanatoria and other institutions for the tuberculous will be £10 above these scales throughout, and special service allowances will be payable for continuous work in such places. In Scotland the salaries appear to be the same, except for assistant nurses, which begin at £80. Other provisions in the code are adequate pensions on retirement (schemes for interchangeability of pension rights are under consideration); a working time consisting of a 96-hour fortnight, whether on day or night duty; hours of duty for nurses and midwives to include the time they spend in lectures and tutorial classes; a minimum of one complete off-day a week, periodical week-end leave of absence, and four weeks' leave a year, with pay, apart from sick leave. All hospitals should have a definite scheme of health supervision for nurses for which a senior physician is responsible. Nurses should have a medical examination on admission, and periodical examinations; they should have careful instruction at an early stage in training about the facts of infection; regular consultation hours should be fixed for nurses, who should be able to approach the physician for a private interview if they so

[1] H.M. Stationery Office. (3d.)

desire, and there should be suitable and adequate sick-bay accommodation. Certain standards are laid down concerning meals and nurses' homes. A relaxation of tiresome and unnecessary restrictions is urged upon hospitals. Recreation and social activities should be encouraged. At mealtimes nurses should be regarded as being off duty. There will be an end of the boarding school-*cum*-nunnery idea which has clung about nursing for too long. A qualified and experienced warden—not necessarily a nurse—should be in charge of the nurses' home. In every hospital there will be a nurses representative council, with a balanced representation of the different grades, and a staff committee for domestic workers. A National Joint Council for employers and employees in the hospital service has been established.

Meanwhile to meet the immediate situation a national reserve of nurses is to be formed. Nurses giving up regular work on marriage or for other reasons will be asked to enrol so as to be available for recall in emergency. There will be no barrier to the employment of married nurses, and it is proposed to offer work to part-time nurses so long as the present shortage exists. Male nurses—men who have had nursing experience in the Forces—are to be encouraged, and a grade of ward orderlies is desired in the large hospitals.

The new Government publication, in its note of urgency, conveys a very different impression from the original White Paper on a National Health Service, which dismissed nursing in a sentence or two as one of the "ancillary services" which ought to go with medical care. The three Ministers declare that the situation is extremely serious and is likely soon to become critical unless thousands of new recruits can be obtained quickly.

"If they are not obtained, large numbers of people urgently requiring treatment will be unable to gain admission to hospital and many patients in hospital will not receive the attention they need. The Government therefore appeal to all men and women who either have experience in this work or who feel that they might do well in it—and particularly to young people who are at this moment thinking about their choice of a career—to come and play their part in this great field of service. . . . The adequate staffing of the hospitals is an urgent national need. It is vital to the successful operation of the new National Health Service. It must be met."

The nation is now paying for its acquiescence for too long in the idea that because nursing exacts from those who enter it a particular devotion they may therefore be underpaid and overworked and subjected to harsher restrictions than pertain to other callings. It is to be fervently hoped that the new realization has not come too late.

PENICILLIN IN BACTERIAL ENDOCARDITIS

The treatment of subacute bacterial endocarditis with penicillin was begun in this country early in the present year, and in a letter to the *Journal*[1] the secretary of the Penicillin Clinical Trials Committee recently reported its early results. These pointed clearly to the need for prolonged treatment: a standard total dose of 5,000,000 units had been given at the rate of 1,000,000, 500,000, and 250,000 units per day, and the percentages of patients who had died or relapsed were 95, 66, and 33 respectively. The policy announced for the future was continuous treatment for 28 days, the daily dose required being the subject of further study. Even more prolonged treatment is advocated by A. L. Bloomfield, C. D. Armstrong, and W. M. M. Kirby,[2] whose policy has been to continue without interruption for six or preferably eight weeks. The initial dose was 200,000 or 300,000 units daily by intravenous drip; later a smaller dose—120,000 to 200,000 units daily—was given by three-hourly intramuscular injections. No heparin was administered. In the treatment of each patient about 10,000,000 units were therefore used. Eleven cases so treated are fully described. All experienced a rapid subjective improvement, and the blood culture became negative, usually as early as the second day of treatment; with the exception of a single patient who died of acute heart failure on the fourth day, every patient had numerous blood cultures both during and after treatment, and none was positive after the fifth day. The temperature fell rapidly in most cases, although in one with a streptococcus abnormally resistant to penicillin *in vitro* the fall was delayed for three weeks, and in others minor degrees of fever, continuous or occasional, were common. Changes in the urine were followed by repeated Addis counts: the degree of microscopic haematuria diminished very slowly, and it had usually not ceased at the end of treatment or even at the last follow-up. There has been no recurrence of infection in any of the 10 patients who completed the course of treatment: 7 are well and at work, while 3 developed heart failure, 1 having already died of this. It is of some interest that these three patients had marked electrocardiographic changes on admission. This series, although short, probably represents fairly what penicillin will do in this disease. The cases were to some extent selected. Results will be worse if treatment is begun at a very late stage or after heart failure has developed; they also depend on the sensitivity of the infecting organism: two other patients are mentioned, one infected with a highly penicillin-resistant streptococcus and one with "influenza bacilli" (presumably *H. para-influenzae*), the course of whose illness was entirely unaffected by penicillin. In the absence of such unfavourable features the infection can evidently be overcome, but in order to achieve this result a prolonged continuous course is necessary, and the minimum of six weeks advocated here is no light undertaking. To embark on such a course without the assurance that it can be carried through to the end—and this means, among other things, first-rate nursing and gaining the patient's co-operation—may be to do ultimately more harm than good.

What neither penicillin nor anything else can do is to repair gross valvular damage. A certain proportion of these patients will always die of heart failure in spite of the valvular infection having been overcome; it is indeed even likely that the shrinkage and fibrosis of vegetations, particularly on the aortic cusps, will render the valve even more grossly incompetent than it was before. Necropsies on two such patients are fully described by P. Rosenblatt and J. Loewe[3]; they had been "cured" of subacute bacterial endocarditis by combined treatment with penicillin and heparin, but died from progressive cardiac failure four and five months later. The aortic valves in each case were so grossly deformed that nothing approaching closure was possible. Histological study confirmed that the infection had been eradicated. One of the cases treated by Dolphin and Cruickshank[4] also came to necropsy because of death from heart failure after successful treatment with penicillin of an acute bacterial endocarditis.

[1] July 28, 1945, p. 132.

[2] *J. clin. Invest.*, 1945, **24**, 251.
[3] *Arch. intern. Med.*, 1945, **76**, 1.
[4] *British Medical Journal*, 1945, **1**, 897.

THE CASE FOR NURSERIES

The National Society of Children's Nurseries (117, Piccadilly, W.) has published in leaflet form a memorandum prepared for the Royal Commission on Population. This sums up nearly forty years of experience and applies it to current problems. The Society states at the outset that it stands for family life, and takes the view that nurseries are an extension of the home and not a substitute for it. Then follows a long list of those who already use or will need nurseries. This includes mothers who go out to work: those who work to supplement the family income; widows; mothers whose husbands are disabled; and the professional woman who wants to start a family without sacrificing her career. The case of the professional woman is of special interest, for they will demand high standards in nurseries, and with the shortage of domestic help this is probably the very solution for a career and a family together. Already some institutions have started a day nursery where the children of the medical staff and the visiting domestic staff are looked after during working hours. Another group is that of mothers who have no help in the house; the mother in chronic ill-health; the mother with a new baby and in need of care for her toddler; and the mother faced with an emergency. In general the memorandum stresses the importance of leisure time to mothers, for their mental refreshment, and also the value of making it possible for man and wife to go out together. For the children it is claimed that the effect of nurseries is good, because they develop under expert care and medical supervision. Mothercraft training is also available through the nurseries, not only for the staff in training, who are the mothers of to-morrow, but also for the mothers who leave their children and are inspired to apply in their own homes what they learn in the nursery. The memorandum goes on to face the common criticisms. As regards infection it states :" The health record of the nurseries has in general been good." A letter, printed in the appendix, from the medical officer of health for Salford is a strong answer to those who claim that nurseries foster infection or a sense of parental irresponsibility. On both charges he claims " quite emphatically that these dangers are entirely theoretical." " Nurseries are required," comments the memorandum, " not in order to take away from parents the responsibilities which should be theirs but to put them in a position to carry out those responsibilities." Other means of easing the strain of family life are enumerated, and they are found wanting in some essential respect. Lastly the cost—" nurseries cannot be cheap "—but it is claimed that no expenditure could constitute a better investment or one which would pay richer dividends. The National Society of Children's Nurseries puts up a strong case, devoid of emotional argument and worthy of close study. It claims that the continuation of a nursery service is one of the essential means for improving the quantity and quality of the future generation.

MEDICAL BENEVOLENCE

Sir Arnold Lawson, who has taken the place of the late Sir Thomas Barlow as President of the Royal Medical Benevolent Fund, has written a short review of the position of the Fund at the end of the war. During the last seventeen years—apparently the year 1927 is taken as the starting-point, because it was then that Sir Thomas Barlow made his first Christmas gifts appeal—the book value of the investments of the Fund has risen from £109,428 to £307,248, the subscription income from £7,645 to £19,292, including in the latter figure the income tax recovered under deeds of covenant, and the charitable distribution from £11,916 to £25,284. The criticism has often been levelled at the Fund that it helps too many beneficiaries by means of very small sums and that it would be better if it helped a smaller number more adequately. Sir Arnold Lawson says that it is planned to give every case a minimum allowance of 30s. a week after the rent has been paid. In the case of old age pensioners any action which the Fund can take is often complicated by the means test applied to non-contributory persons, who cannot draw their old age pension if their total income amounts to more than £91 5s. per annum—a wholly inadequate sum in these days but one which the Fund can do nothing to improve unless it disregards the old age pension, which would be an expensive procedure. The question of homes for old people who cannot look after themselves has been engaging the attention of the committee for a long time, and it is hoped to report substantial progress next year. It is a large undertaking, entailing the expenditure of a considerable capital sum, but the new President feels that the experiment will succeed and that a gap which has long been obvious will be filled. A tribute is paid to the honorary local secretaries, who number 215. Regret was expressed at the resignation, owing to ill-health, of Dr. C. O. Hawthorne, who for many years presided over the Case Committee, which is the medium for all the charitable distributions. Donations for the Christmas Gifts Fund should be sent to the Secretary, R.M.B.F., 1, Balliol House, Manor Fields, Putney, S.W.15.

NEW QUARTERLY JOURNALS

Next year the B.M.A. is to publish three new special quarterly journals: the *British Journal of Pharmacology and Chemotherapy*, the *British Journal of Social Medicine*, and *Thorax*.

The first is to be published in co-operation with the British Pharmacological Society, and the third with the Association for the Study of Diseases of the Chest. The proposal for publishing the second journal came from Brig. F. A. E. Crew, Prof. Lancelot Hogben, and Sir John Orr. Discussions for launching these new periodicals have been going on for the past two years, but it is only now that licence for publication has been obtained. Papers for the first journal should be sent to Dr. H. R. Ing, Department of Pharmacology, Oxford; for the second, to Brig. F. A. E. Crew, F.R.S., the Usher Institute, Warrender Park Road, Edinburgh, 9; and for the third, to Mr. N. R. Barrett, F.R.C.S., 2, Dorset Street, London, W.1.

Dr. Cecil Wall will deliver the Fitzpatrick Lectures before the Royal College of Physicians of London on Tuesday, Dec. 11, and Thursday, Dec. 13, at 5 p.m. at the College, Pall Mall East. Subject: "The History of the English Medical Profession—(1) the Eighteenth Century, (2) the Nineteenth Century."

The Council of the British Medical Association has decided to extend the facilities for borrowing books from the Library to members serving with Occupation Forces, and other official organizations, in the Continent of Europe. This is an experiment, and its continuance will depend upon the various factors applicable to conditions prevailing on the Continent in so far as loss and damage to books are concerned. The ordinary rules as to the borrowing of books will apply, with an extension for time taken in transit. No deposit will be required. Applications for books should be made to the Librarian at B.M.A. House, Tavistock Square, London, W.C.1.

The Central Medical War Committee has been informed of a further acceleration of the rate of release of R.A.F. medical officers. In addition to age-service groups 21 and 22, Groups 23, 24, and 25 will be released during December, 1945.

THE PROBLEM OF RICKETS

The British Paediatric Association in a six-page printed memorandum on rickets, which has been issued by the Ministry of Health and the Department of Health for Scotland to medical officers of health for the information of their medical staff, health visitors, midwives, and district nurses, finds that rickets as a general cause of ill-health among babies in England is now nothing like what it was of old ; in fact it is no longer a common disease in this country. At the same time rickets is preventable, and therefore there is no reason why it should occur at all. It is the duty of all who are concerned with children to see that it disappears completely.

The memorandum is arranged under three main headings: aetiology, diagnosis, prophylaxis and treatment. In view of the fact that in the British Isles, owing to a relative lack of sunshine, rickets—a metabolic disorder—must be regarded as primarily a nutritional problem, the memorandum stresses that if a deficiency of vitamin D is avoided the condition will not occur. It has been established by scientific evidence that vitamin D supplied in adequate amounts will prevent rickets. If the disease is actually present it can be cured by supplying vitamin D, thus overcoming the deficiency which has caused it

Diagnostic Difficulties

The diagnosis of rickets presents problems which are discussed at some length. The gross findings so commonly met with in bygone times are rare to-day, and whereas the diagnosis was formerly easy because of the florid form in which the disease presented itself, the clinical diagnosis is apt to be extremely difficult now, owing to the mild signs present in the stage at which it is desirable to detect the disorder and prevent its further development. Where only minor degrees of bony change exist, clinical diagnosis of rickets may be impossible. Can radiology solve the problem, and if so to what extent? "Certainly radiology is of great help and has become increasingly important in the recognition of the milder types of the disease now encountered, but it must not be used to the exclusion of clinical examination. . . . For diagnostic purposes a careful history and clinical examination, together with *x*-ray investigation, while not yet yielding perfect results, will give the most useful information that can generally be obtained at the present time ; but this should be supplemented in doubtful cases, whenever possible, by an estimation of the blood phosphatase, for the limitations of both clinical and *x*-ray examinations must not be lost sight of."

Prophylaxis and Treatment

While the diagnosis of rickets is clearly not easy, its prevention and treatment give rise to no particular difficulties, and are in fact simple. To guard against dietary deficiencies, and because breast-feeding is no certain preventive of rickets, the memorandum recommends that babies, however fed, should receive a supplement of vitamin D. Pointing out that, broadly speaking, a daily intake of 500 to 800 international units of vitamin D should prevent rickets throughout infancy, it mentions that cod-liver oil *B.P.* contains 330 i.u. per drachm, while the Ministry of Food's cod-liver-oil compound contains 750 per drachm. "A cod-liver-oil and malt mixture should not be employed as a prophylactic measure against rickets. Its actual content of cod-liver oil, and therefore of vitamin D, is usually small, and it only engenders a sense of false security. For the same reason it should be remembered that cod-liver-oil emulsions contain only 30 to 50% of actual cod-liver oil."

Rickets can occur in a baby before its birth, when the diet of the mother is of vital importance for the child, but the disease is more frequently found in the early years of life, when growth is more rapid. The fact that rickets can be completely avoided by the proper use of simple preventive measures goes far to offset the difficulties associated with diagnosis. In treating active rickets ultra-violet irradiation could be combined, when practicable, with oral administration of vitamin D, the latter in larger doses than when employed for prophylaxis. The carbon-arc lamp is at present by far the most satisfactory source of ultra-violet light for treatment of rickets. Infants who have started to walk should be kept off their feet during the first three or four weeks of treatment.

The memorandum recalls that a special inquiry, carried out by the British Paediatric Association by arrangement with the Ministry and the Department during the war, yielded no evidence that wartime conditions had given rise to an increase of rickets.

THE DISCOVERY OF X RAYS

RÖNTGEN AND PURE SCIENCE

The commemoration of the fiftieth anniversary of Röntgen's discovery of *x* rays[1] was continued in a joint meeting of all participating societies which was addressed by Sir Lawrence Bragg, with Sir Henry Dale, P.R.S., presiding. Sir Lawrence Bragg spoke of Röntgen's discovery in relation to pure science. He quoted from a speech by Sir J. J. Thomson in 1916 at the foundation of the Department of Scientific and Industrial Research, in which he had pointed out that *x* rays were not discovered as the result of research in applied science but of research in pure science, made with the object of discovering the nature of electricity. The experiments which led to the discovery seemed as remote from humanistic interest as could be imagined. Research on the lines of applied science would doubtless have led to an improvement and development of older methods, but research in pure science led to an entirely new and much more powerful method. To use J. J. Thomson's words, applied science led to reform, pure science to revolution. Röntgen's discovery of "rays which I will call *x* rays for short"—to quote Röntgen's original paper—was no chance hitting on something which might have been rather different ; the only possible condition in which *x* rays could have been produced was the condition of a discharge tube where the electrons had a long run, a high potential of 50,000 volts or so, and something for the electrons to hit at the end so that they produced the ray. Sir Lawrence Bragg said that he had no idea until he came to read Röntgen's original paper how far he went and how ingenious he was in that contribution. One of the first consequences of Röntgen's discovery was the stimulus it gave to researchers at Cambridge—Rutherford and others—on the ionization of gases which led to the new physics and the work on the structure of the nucleus and all that had resulted therefrom. It was difficult to think of another single discovery which had led to such vast results.

Other commemorations in London during the second week of November took place under the auspices of the Royal Society, the Royal College of Surgeons of England, the Section of Radiology of the Royal Society of Medicine, and the Institution of Electrical Engineers. Most of the addresses delivered were in reminiscent vein.

JUBILEE LECTURE IN EDINBURGH

The discovery and early history of investigation of *x* rays was the subject of the first of four Keith lectures delivered in the University of Edinburgh on Nov. 12 by Prof. Norman Feather. The course was arranged by the Royal Scottish Society of Arts to mark the jubilee of the discovery of *x* rays. The other lecturers are Dr. Robert M'Whirter, Edinburgh, and Prof. G. D. Preston, Dundee.

Prof. Feather, after discussing the investigation of the phenomena involved in the passage of electricity through rarefied gases from the time of Faraday onwards, said that in 1895 Röntgen discovered a new and quite distinct effect outside a cathode-ray tube: an invisible radiation proceeding in straight lines from the points of impact of the cathode rays on the wall of the tube, capable of affecting a photographic plate or a fluorescent screen and of throwing partial shadows of solid objects placed in its path. Röntgen discovered this phenomenon as it were accidentally, but he was fully aware of the importance of his discovery. From the point of view of pure physics the outstanding contributions at that stage came from Cambridge. J. J. Thomson and M'Clelland discovered the ionizing power of the rays, and Thomson and Rutherford, as the result of a brilliant series of experiments, within a few months formulated the basic ideas which were still used in all discussions of gaseous conduction. Then Thomson, more fully than, but perhaps not quite so early as, certain Continental physicists, established the nature of the cathode rays (1897), and Stokes put forward a theory, which was recognized as essentially correct to-day, of the mode of production of *x* rays by the impact of the cathode rays on matter.

[1] See *British Medical Journal*, Nov. 17 1945, p. 699.

SPECIAL FIELDS OF NURSING

Nurses are required to give a year of special service to the State after qualification, and it has been decided that the fields of service for State-registered nurses qualifying through the October, 1945, examinations in Great Britain will be as follows: (*a*) Nursing of tuberculosis, mental illnesses, and chronic sick. (*b*) Training as a midwife, which at present carries an obligation to practise midwifery for a year after passing Part II of the C.M.B. examination. (*c*) Training with District Nursing Associations. (*d*) Employment in certain E.M.S. hospitals. (*e*) Nursing in a cancer hospital. (*f*) Nursing or training in a hospital specially devoted to ophthalmic or E.N.T. patients. (*g*) Nursing in infectious diseases hospital. (*h*) Nursing in a hospital affiliated to a complete training school. (*i*) Training for Part I of the C.M.B. examination, which may be preceded or followed by six months' service in any other special field.

NURSING OF TUBERCULOUS PATIENTS

In a circular letter to hospital authorities, dated Oct. 12, the Minister of Health calls attention to the continued shortage of nurses for patients with tuberculosis, resulting in the closure of many beds which could otherwise be made available for such patients. The Minister of Health and the Minister of Labour and National Service are seriously concerned at the present position, and various measures have been taken in an effort to alleviate this. But although such action has undoubtedly helped sanatoria it has not been possible to keep pace with the growing demands. The introduction of mass radiography, for instance, by facilitating the discovery of cases at a stage when they are likely to respond well to treatment, has increased for the time being the number of patients in need of immediate treatment. The estimated shortage of nurses of all grades for tuberculosis beds on May 1, 1945, was 1,909, being a deficiency of 24.2% on establishment.

The Ministers are well aware of the widespread shortage of nurses in all types of hospitals and in the health services generally, and every effort will continue to be made to help employing authorities in this matter. The shortage in the tuberculosis services is, however, especially acute. The number of patients awaiting admission to hospital for treatment for tuberculosis on June 30, 1945, was 4,972, compared with 4,628 on March 31, and the waiting patients include ex-Service men and women and repatriated prisoners of war. In these circumstances the Ministers have decided to appeal to the authorities of all hospitals other than tuberculosis institutions, notwithstanding their own difficulties, to review the nursing staffing of these hospitals and to consider whether in view of the acute difficulties at tuberculosis institutions it is not possible for them to release some of their trained (or assistant) nurses for service in such institutions. Hospital authorities would need the willing co-operation of the nurses whom it was proposed to release for tuberculosis work, but the Ministers are hopeful that if the full facts and the urgency of the need are explained to the nurses they will co-operate.

Regional conferences and discussions have been held to encourage arrangements under which student nurses taking their general training spend part of their time in tuberculosis work. The Minister of Health understands that, following these conferences and discussions, a number of authorities have made, or now contemplate, arrangements (subject to the approval of the General Nursing Council) whereby student nurses taking general or fever training could with advantage be seconded to sanatoria for part of their training. He is anxious that such arrangements should be made more general.

MEDICAL DEFENCE IN SCOTLAND

At the annual meeting of the Medical and Dental Defence Union of Scotland held in Glasgow on Oct 19 it was reported that during the year membership had increased by 345, the number of members now being 5,463, of whom 1,883 are on active service. In connexion with the work of the year it was mentioned that cases have come to the notice of the Union in which errors have been made in administering dangerous drugs. Members are advised to verify the contents of bottles immediately before using them, even though it may also be the duty of some other person to do this. Another piece of advice concerns the desirability of keeping a careful record of consultations, treatment, and appointments, including telephone calls, and all information on the progress of cases. Such records, being contemporary evidence of what transpired at the time, are very valuable in the event of disputes arising at a later date. The council has prepared a model form of assistantship agreement which can be had on application. The working arrangement with the Medical Defence Union and the London and Counties Medical Protection Society has been advanced. An excellent financial report was presented, showing that the Union had been able to strengthen its position notwithstanding the loss of revenue due to waiving subscriptions from members in the Forces.

Reports of Societies

BRITISH ORTHOPAEDIC ASSOCIATION

The annual meeting of the British Orthopaedic Association was held at the Royal College of Surgeons of England on Oct. 26 and 27.

Accident Prevention

Mr. St. J. D. BUXTON, in his presidential address, reviewed methods of preventing accidents. Fatal accidents in industry had fallen in number, but there had been in recent years a steady increase in all reported accidents. Injuries of the foot and hands were of particular frequency. It had been estimated that the financial cost and production loss from industrial accidents amounted in this country to £70 million a year. Propaganda was needed for the further education of the workman and others. Members of the Association should aid in preventive work by inquiry as to the exact causation of accidents and in other ways should effect closer co-operation with those concerned with industrial medicine.

Prof. T. P. McMURRAY, in the course of a fascinating account of the historical background of Hugh Owen Thomas, went on to describe the classical splint which Thomas, and his disciples, called the "bed knee splint." The efficiency of this appliance, which Thomas evolved in his own workshop, was emphasized. Almost all the improvements and alterations since made had been tried out by Thomas and discarded. The details of the splint's construction, measurement, and application were described. Simplicity in design meant that there was little to go out of order. There should be no cause for anxiety given care in nursing and surgical faith and knowledge.

Congenital Dislocation of the Hip

Prof. J. LEVEUF, of Paris, described investigations, based upon arthrography and operation, which showed that there was a complete difference between congenital subluxation and congenital dislocation of the hip. He differed from the commonly accepted view that subluxation was a preliminary stage leading to dislocation. In arthrograms of dislocation the limbus produced by the upper portion of the cotyloid ligament or cartilage was visualized as a downward projection causing the usual hour-glass contraction; in subluxation this shadow was never found, for the limbus was pushed upwards and compressed against the ilium. In dislocation the head of the femur was small and the ligamentum teres persisted; in subluxation the femoral head was large and the ligamentum teres absent, and there was no other interposition of soft tissue. Anteversion of the femoral neck was an early finding in subluxation; it was a late or secondary deformation in dislocation.

In treatment, Prof. Leveuf stressed the need to get a hip in which the femoral head and the acetabulum conformed. Closed reduction was only suitable under the age of 2. Afterwards he favoured operation, and in those cases requiring reconstructive work to restore the bony conformation he favoured a transtrochanteric intra-articular approach, in which osteotomy of the femoral neck was carried out, if necessary, and the acetabulum deepened by turning down its roof and the insertion of a graft above it.

Mr. J. S. BATCHELOR reviewed the problem from the point of view that congenital dislocation of the hip was an external rotation–adduction deformity with three stages of severity. Treatment consisted in correction of soft-tissue contracture by gradual abduction, followed by manipulative reduction and reversal of the deformity with encouragement of normal development by function. For this purpose he used knee plasters joined together by a cross-bar, the hips being held in abduction and internal rotation but otherwise free to move in flexion and extension. For cases showing redislocation, anteversion, and valgus of the femoral neck, osteotomy to reduce these deformities was carried out after replacement of the head in the acetabulum.

In the discussion which followed, Mr. H. A. T. FAIRBANK remarked that Prof. Leveuf appeared to do open operations more often than was thought necessary in this country, yet his results were excellent. His own view had been that hitherto the problems of anteversion and valgus had been overstressed: evidently he was wrong. Anterior transposition or anterior dislocation he thought should be left alone.

Prof. HARRY PLATT, speaking from more than 30 years' experience of nearly 500 cases, strongly supported Prof. Leveuf's view that subluxation and dislocation were two distinct morphological entities and that future contributors to the subject should classify cases accordingly. He also believed that the femoral heads were naturally placed posteriorly in many cases and anteriorly in some. He denied that the former could be forced into the latter position, and he also believed that the position of marked internal rotation for fixation was dangerous. Mr. G. R. GIRDLESTONE expressed anxiety over the risks of avascular changes in the femoral head after extensive intra-[illegible] operations.

Sir REGINALD WATSON-JONES, reinforcing Prof. Platt's views, thought that there were a multiplicity of morphological types. He distinguished three main types from the point of view of treatment. The first were those hips which were reduced in full abduction, and after a year remained reduced. The second group, after a year of abduction, tended soon to subluxate on being allowed to kick about in bed. In the third group, despite full abduction the heads were never fully reduced to the bottom of the acetabulum. The second and third groups required operative treatment, and the last one should be recognized early and operated on promptly. He believed that there was less risk of osteo-arthritis in cases with incongruity of capital and acetabular form than there was in those with avascular changes in the femoral head. For this reason he felt that a long period was needed to permit of judgment of Prof. Leveuf's results.

In reply Prof. LEVEUF said that true dislocation was more difficult to reduce by non-operative methods; the ease of "reduction" in subluxation was deceptive, and the results by this method likely to be disappointing. If a state of subluxation continued, osteo-arthritis would be certain to occur. He stressed the value of the arthrogram, not only for diagnosis but also as the most satisfactory test for reduction. He was convinced of the value of his complete operation. In 202 cases in which he had done open operations of all kinds he had had only one case of necrosis of the femoral head. The secret he felt was that there was no interference with the circulation which entered the femoral head from the soft tissues below the femoral neck.

Orthopaedics in Medical Education and in Regional Hospital Services

Starting from the definition by Robert Jones that orthopaedics is "the treatment by manipulation, operation, re-education, and rehabilitation, of the injuries and diseases of the locomotor system," Prof. HARRY PLATT (Manchester) reviewed the evolution of specialism in surgery, or differentiation, as a changing pattern. There were two fundamental requirements: each surgical specialty must continue to advance the general craftsmanship of surgery, and—of even greater significance—it must contribute to general ideas. Richness of technological advances would not compensate for poverty of ideas or vision. The recruitment of men and women trained in scientific and historical methods and with standards of high scholarship was needed for the preservation of vitality in the differentiated fields. Prof. Platt regarded abdominal surgery as the "romantic" movement in surgery with its growth during the twentieth century; orthopaedics, embracing a large part of the general surgery practised by the nineteenth-century surgeon, as being rooted in the classical period. The automatic right of the abdominal surgeon to assume leadership in the affairs of surgery could no longer be admitted. A plea was made for more satisfactory integration of undergraduate teaching in orthopaedics; not to instil the details of complicated techniques, but to introduce and to explain to the student the clinical phenomena of the disorders of locomotion, the biological and social background of crippling disease, and the ancient therapeutic methods of rest, fixation, and purposive movement. Orthopaedic teaching must permeate the undergraduate course. In postgraduate education three types of instruction were considered: the training of the orthopaedic surgeon of the future; postgraduate instruction of the short intensive type; and training for higher degrees or diplomas in orthopaedics, the desirability of which was doubted.

In the Regional Hospital Service of the future the orthopaedic services were envisaged as of two types. In an area with a population of 150,000 one orthopaedic-accident surgeon would be associated with two general surgeons in the key hospital, his time being devoted predominantly to the problems of trauma. Such an area unit would not supply enough examples of the rarer orthopaedic problems to enable the peripheral orthopaedic surgeon to become expert in their handling. Certain types of work—for example, the long-term care of the crippled child and of surgical tuberculosis—were already in effect regionalized by State action. Some of the more specialized orthopaedic problems must flow on the one hand to university centres and on the other to county orthopaedic hospitals. The link between central and peripheral orthopaedic departments must be preserved through the association of the staffs of one with the other.

Other Communications

Island Epidemic of Poliomyelitis.—Prof. H. J. SEDDON (Oxford), in describing an epidemic in Mauritius, found that the evidence on this occasion strongly suggested the transmission of the disease through personal contact. He gave a picturesque account of the conditions of this colony with its mixed population, and of its difficult social and economic state. Later he outlined a scheme for the advancement of orthopaedics in the Colonies, where great opportunities existed for young orthopaedic surgeons keen to tackle a pioneer problem of great importance to the welfare of vast areas. The appointment of such men should be part of a scheme that related them to orthopaedic establishments at home, and through which, after three years or so, their future security would be assured.

New Principle in Splint Construction.—Mr. NORMAN CAPENER (Exeter) demonstrated two splints based upon existing types used for the substitution, or support, of deficient muscle activity, as in the familiar toe-raising spring for paralytic equinus. Such appliances usually had springs attached to a rigid framework, whereas the present appliances were themselves constructed into "lively" springs. The appliance for drop-foot in which the upright element (either single or double) was suitably tempered and coiled at the level of the ankle-joint had the advantage of permitting a certain degree of lateral mobility in the foot. The second splint, used in ulnar intrinsic paralysis, was based in its clinical application upon an original design produced by Mr. A. M. Hendry and his co-workers at Derwen, Oswestry, and also possessed great advantages of "liveliness" over previous ulnar splints, which only rigidly maintained flexion of the knuckle-joints.

Arthrography of the Knee-joint.—Squad. Ldr. E. SOMERVILLE demonstrated an improved technique for the diagnosis of lesions of the knee-joint by air arthrography. A series of 331 knees had been investigated and a very high degree of accuracy in diagnosis achieved. Success depended upon precision in attention to the following details: examination of the joint under anaesthesia followed by injection of filtered air until it was full; the intra-articular pressure was then temporarily increased by bandaging over the suprapatellar pouch; positioning of the joint over a curved cassette; the use of a sinus cone; and accurate direction of radiation in seven tangential planes. Beautifully clear radiographs were shown.

The Fractured Femur.—Three different methods of treating simple extra-articular fractures were discussed.

Mr. R. G. PULVERTAFT (Grimsby) dealt with fractures of the trochanteric region, for which he preferred the Hamilton Russel method of balanced traction without splintage. The advantages claimed were efficient traction with the joints in optimum position, complete comfort, muscular relaxation and well-being; the maintenance of muscular condition and knee-joint movement; and reduction of chest and decubitus complications owing to freedom to sit up and change position. Careful supervision was essential. There were none of the disadvantages of any other method of treatment and it had given a high proportion of favourable results.

Major JOHN CHARNLEY, discussing the treatment of fractures of the shaft by fixed skeletal traction, stressed the importance of controlling lateral angulation and of maintaining immobilization of the fracture, and therefore of the knee-joint, for fully eight weeks. Special apparatus, which he had devised, was used in conjunction with the Thomas bed knee splint; it was designed to give precision, and to be relatively foolproof after accurate adjustment by the surgeon. The essentials were traction upon a pin through the upper end of the tibia, pulling along a line posterior to the femoral axis, with the femur supported across a specially shaped padded metal fulcrum. Lateral control was achieved by pads screwed on to adjustable fitments to the lateral bars. Early movement of the knee was not only inadvisable, it was unnecessary.

Mr. G. R. FISK proceeded by a completely opposite course, establishing early movement by the use of skeletal traction in a flexing splint made from a Thomas splint sawn off at the knee level and joined by an articulation of the Pearson type.

Mr. V. H. ELLIS in a study of 420 recent femoral shaft fractures supported the advocates of early knee movement. The causes of limited flexion were intra-articular adhesions, fixation of the quadriceps, scarring in the region of the fascia lata, especially in high compound fractures, and transfixion of the muscle by spicules of bone.

Actinomycotic Infection of Gun-shot Wounds.—Mr. C. H. CULLEN (Winwick) reported upon five cases, in four of which the organism was of an unusual aerobic type. All the cases were very chronic and resistant to treatment. Adequate surgical measures combined with penicillin seemed to be of most use. It was interesting that the latter treatment was beneficial in cases in which concomitant organisms were insensitive to penicillin.

Pollicization of the Index Finger.—Mr. E. W. BINTCLIFFE demonstrated two patients successfully treated by him, in conjunction with Major Kilikian, U.S.A.M.C. In such cases after amputation of the thumb the web space between the index and middle fingers was deepened by dissection. The second metacarpal was divided, allowing the index to be abducted and attached by wire suture either to the remains of the first metacarpal or to the trapezium. The defect created between the new thumb and the middle finger was filled by a skin graft. It was desirable to carry out abduction by traction with a wire transfixing the index. The two patients shown had very good function in the "thumbs" thus produced.

Clinical Photography.—Mr. P. G. HENNELL (of the Metal Box Co. Ltd.) impressed everyone with the need to take seriously this important aid to scientific recording and medical education, and to use adequately the apparatus which recent technical advances had placed at our disposal. He believed that in five years black-and-white photography would largely have been superseded by colour in the production of scientific records. The apparatus which he had used in clinical photography was demonstrated as well as a wide selection of colour photographs of surgical procedures.

PEPTIC ULCER

At a meeting of the Paddington Division of the B.M.A. held at St. Mary's Hospital recently Prof. G. W. Pickering and Prof. C. A. Pannett opened a discussion on peptic ulcers.

Prof. PICKERING regretted that his house-physicians and senior students showed little interest in this condition. As the incidence of peptic ulcer in the general population, he said, was roughly 10% it deserved closer attention. While the cause of the development of peptic ulcers was unknown, various factors which contributed to that development and to recurrence were known. The gastric juice itself, with its hydrochloric acid content, was an essential though not the sole factor. A second factor was the state of the gastric mucosa; and a third, a psychological one, the influence of the mind. Pain was due to the action of hydrochloric acid on the nerve endings at the base of the ulcer. The routine medical treatment for peptic ulcer was: (1) bed; (2) diet which controlled acid—i.e., meals taken at one- to two-hourly intervals, as digestion temporarily reduces acidity; and (3) alkalis, experiments with which had shown that, contrary to common opinion, magnesium trisilicate had a very poor neutralizing effect; in Prof. Pickering's view the most effective agent was the common pharmacopoeial pulv. alk.; (4) removal of anxiety. In spite of treatment ulcers did recur, and recurrences were more frequent in hospital patients than in those in more fortunate circumstances. Factors which contributed were lack of co-operation between the doctor and the patient; difficulty in keeping to the prescribed diet, possibly because of expense; anxiety caused by social conditions; inattention to teeth; and smoking.

Referring to the treatment of complications Prof. Pickering said that haematemesis should be controlled by transfusion and then early feeding; surgery had no place in the treatment of this condition. In cases of perforation, however, surgery was necessary at the earliest possible moment. In pyloric obstruction surgery was also necessary, but where for some reason surgery was not indicated he had seen good results from the aspiration of the stomach night and morning. Prof. Pickering stated that the results of medical treatment of peptic ulcers were, on the whole, disappointing. Patients had to live careful lives to maintain health, and recurrences not infrequently occurred.

Prof. PANNETT said that, although the aetiology of peptic ulcers was unknown, surgery had to work on some hypothesis. There were three theories: (1) Infective: gastric ulceration behaved like a localized infection in that it waxed and waned and had a seasonal incidence, also it was possible that the fibrous tissue which formed round the ulcer was toxic in origin; the infective theory was difficult to prove, as animals did not develop peptic ulcers. (2) Digestive: sites favourable to peptic ulcers were along the lesser curvature of the stomach and in the first part of the duodenum—namely, those parts of the gastro-intestinal tract regularly bathed with acid. (3) Neurogenic: Cushing performed experiments which demonstrated the effect of nervous impulses on the development of peptic ulcers; this was probably due to some "vagus" action. The basis for surgery would therefore seem to be the reduction of the amount of gastric juice produced. The surgeon must remove the pyloric part of the stomach and a large surrounding area, thus allowing a free neutralization of the stomach contents. It had also been found essential to remove the ulcer at the same time.

When considering the results of surgery in cases of peptic ulcers one must remember that the surgeons were operating on those cases which had not responded to medical treatment. He claimed that 87% of cases were cured, and by cured he meant that the patients no longer had to take care of their diet, they could eat anything, and, in short, "did not know they had a stomach." The mortality rate was low—somewhere in the region of 1%.

In the general discussion the chairman, Dr. G. DE SWIET, asked what reliance could be placed on radiology in diagnosis. Dr. JACOB said he found it very difficult to assess when ulcers were cured, especially in the case of duodenal ulcers, when radiology had often let him down. He commented on the fact that closure for perforation seemed to reduce symptoms for a considerable time. Dr. STOWELL had seen the dramatic effect on duodenal haemorrhage of adrenaline by mouth in doses of 1 c.cm. in 10 c.cm. of water. Dr. LONG, speaking from his experience in industrial medicine, stressed the importance of the psychological factor in the production and recurrence of peptic ulcers, and urged that physicians should give more attention to the social background and future of gastric patients. He found ascorbic acid in doses as small as 25 mg. to be beneficial.

Replying to questions Prof. PICKERING said that he considered radiology useful but not infallible. The same applied to gastroscopy. The clinical history was at least as important as radiology. Prof. PANNETT confirmed Dr. Long's observation on the value of ascorbic acid. He wondered whether the common belief that there was a reduction of symptoms following perforation might be explained by the theory that there had been an acute exacerbation of the infective agent which gave immunity for a considerable period. He had noticed that bleeding from gastric ulcers was much more serious in patients over the age of 45. Medical treatment for haematemesis might be worth trying in the younger age groups, but, in his opinion, surgery should be resorted to as soon as possible in older patients.

Major J. MINTON, in a lecture on eye diseases in the East, given at the Royal Institute of Public Health and Hygiene, said that every year, in the spring and late autumn, epidemics of conjunctivitis attacked thousands of infants and children in Iraq, India, and Ceylon. (The Middle East—Egypt, Palestine, and Iraq—has been well known from time immemorial for its high incidence of eye infections, and blindness often resulting therefrom.) The hospitals were crowded with natives who brought their children to the cities. The conjunctivitis was highly virulent and often extended to the cornea, causing severe corneal ulcers which might perforate and lead to blindness of the infected eye. The best treatment for all types of muco-purulent conjunctivitis was local and general treatment with sulphonamides. Penicillin had been used recently with great success: it would save many eyes which, up to a short time ago, would certainly be destroyed by virulent infections. Unfortunately, in the East these modern methods were used but rarely. The native population of the Middle East was also highly infected with trachoma. The disease started in childhood, was very infective to adults, and needed energetic treatment. Within recent years general and local treatment with sulphonamides had proved most successful. Efficient treatment would diminish the incidence of trachoma in the East and the appalling blindness resulting from it. In India and Ceylon the poor often suffered from vitamin A deficiency; in Karachi and Ceylon Major Minton saw many children suffering from this disease which also affected the eyes. In the early stages children and adults complained of difficulty in seeing in the dark. The conjunctiva showed small yellowish areas. The cornea lost its lustre, corneal ulcers appeared, and generally the whole cornea might necrose. The eye might develop a generalized infection, going on to blindness. Intensive treatment with high doses of vitamin A would save the child's eyes if this was started in the early stages of the disease.

At the annual general meeting of the Association of Industrial Medical Officers the office bearers for 1945–6 were elected, as follows: Chairman, Dr. W. Blood; Hon. Secretary, Dr. P. Pringle; Hon. Treasurer, Dr. Patricia Shaw; Executive Committee, Drs. J. A. Amor, J. G. Billington, J. C. Bridge, T. A. Lloyd-Davies, C. L. Potts, and R. S. F. Schilling.

Correspondence

Medical Books for Holland

SIR,—Would you be good enough to allow us space to make an appeal for our Dutch colleagues. There is almost no limit to the kind of help which the Dutch need, but there is one special form of assistance which the medical profession may be able to afford. We are, both of us, members of the Help Holland Council, and are thereby kept in very close touch with that country. Information has reached us that there is need at the moment for small modern medical libraries which can be consulted by the medical students in the training hospitals in Holland. If the depleted ranks of the medical profession of Holland are to be filled, up-to-date medical literature for the students is of vital importance. We suggest that a doctor should look through his shelves to see if he can spare any up-to-date medical, surgical, or scientific books.

Gifts will be greatly appreciated, and should be sent to Help Holland Council, Norman House, 105/109, Strand, W.C.2. —We are, etc.,

MORAN.
ALFRED WEBB-JOHNSON.

The Teaching of Human Anatomy

SIR,—We have become accustomed of late to hear of plans for reducing the time and the content of the curriculum in human anatomy. It may happen that, with all the younger sciences demanding his attention, the medical student will be forced to effect some economy in the time spent in obtaining first-hand knowledge of the structure of the human body, but it is dangerous to assume that this knowledge is becoming less necessary to those who are to engage in the active practice of their profession.

Probably all will agree that, if any pruning is to be done to the curriculum in human anatomy, it is essential that it should be undertaken by men who are themselves medical graduates and who have specialized in the study and in the teaching of the structure of the human body. Only thus can it be ensured that our future physicians and surgeons will obtain the knowledge necessary for dealing with the everyday problems of their professional work. We cannot contemplate without very real misgivings a state of affairs in which the teaching and examining of medical students in the subject of human anatomy are handed over to anyone not medically qualified or possessing that first-hand knowledge of the structure of man can be attained only by the long apprenticeship hitherto considered as an essential qualification for the tenure of a chair of human anatomy.—We are, etc.,

J. C. BRASH
E. R. A. COOPER
D. V. DAVIES
J. DAVIES
W. L. H. DUCKWORTH
D. A. W. EDWARDS
J. D. GREEN
H. L. H. GREEN
R. B. GREEN
W. C. O. HILL
G. W. HARRIS
H. A. HARRIS
R. G. INKSTER
E. B. JAMIESON
J. KAY JAMIESON
J. TUDOR JONES
F. WOOD JONES
ARTHUR KEITH
R. D. LOCKHART
A. LOW
M. A. MACCONAILL
J. W. MILLEN
W. R. M. MORTON
E. L. PATTERSON
G. F. ROMANES
J. H. SCOTT
D. STEWART
R. WALMSLEY
T. WALMSLEY
W. H. WOOD

Debility following Blood Donations

SIR,—During the last six years thousands of lives have been saved by blood transfusion, as articles published in your pages bear witness. The importance of blood transfusion itself as a therapeutic measure, and of specialized products prepared from human blood that are essential for plastic and cerebral surgery, will continue to grow in peacetime. There is at present no adequate substitute for human blood and its products.

I have reason to believe from a small inquiry made during the summer that many donors are most anxious to continue to help their fellows by making a regular blood donation to the national blood transfusion service. I hope that all medical practitioners will realize how essential it is to the health of the community that this service should continue, and will encourage their patients to support it.

At the moment a few donors are bringing letters from their doctors stating that they are suffering from "debility following blood donations." Our prolonged follow-up of numbers of regular donors in the N.W. London area makes me sceptical of this diagnosis of the cause of debility. Haemoglobin estimations made on donors who have given their blood at least three and sometimes as often as ten times in the preceding five years showed that in extremely few instances was the haemoglobin level below 80% Haldane, which has been generally accepted as a safe level above which bleeding might be carried out. In the few instances in which a lower figure was found a course of iron therapy given by the donor's own practitioner immediately returned the figure to normal. Even in those with a level below 80% no general symptoms were noticed by the patients and they were always anxious to continue to give blood. Any donor found on routine examination to have a haemoglobin level below 80% Haldane is now given iron free of charge.

Evidence available on large series of donors elsewhere supports the point of view that blood donations made not more frequently than three or four times a year are without effect on the general health.—I am, etc.,

Oxford. JANET VAUGHAN.

Morphine as a Prophylactic against Ileus

SIR,—We wish to thank Prof. J. H. Burn for his letter (Nov. 3, p. 622) upon this subject. We believe that the mechanism of neurogenic ileus is an alteration in the gradients of the bowel, and that in "paralytic ileus" there is a general or local flattening of these gradients (see Arris and Gale Lecture, 1945, for details) with general or local distension of the gut. The essential features in the prophylaxis and treatment of the condition are, first, removal of the cause producing altered intestinal gradients, and, secondly, the prevention and relief of distension, which may rapidly become enormous and lead by stasis to severe fluid loss into the lumen and wall of the bowel and to intramural thrombosis and gangrene besides pressure effects on the cardiovascular and respiratory systems.

The value of morphine in the treatment of the condition is still a matter of dispute, but numerous observations are now available showing its action on the human intestinal tract when used in normal therapeutic doses. Plant and Miller (*J. Pharmacol.*, 1926, **27**, 316) demonstrated that morphine acts directly on the smooth muscle of the small intestine and increases tone waves both in size and in frequency. They were able to show on dogs that the increase in tone started in a few minutes and lasted from 5 to 8 hours and sometimes even for 12 hours. This prolonged general increase of tone is associated with a slight increase in the amplitude of segmentation and peristaltic movements, though peristalsis was decreased in rate after the first two hours. The giving of atropine had no effect upon the action of morphine on the gut. Wangensteen (*Proc. Soc. exp. Biol.*, N.Y., 1931, **28**, 434) confirmed these findings in experimental intestinal obstruction, and Dragstedt (ibid., 1931, **28**, 1056) found the same results obtained in peritonitis. Plant and Miller (*J. Pharmacol.*, 1927, **32**, 437) also found a similar effect upon the colon, and showed (ibid., 1926, **28**, 241) that these effects upon the gut continued after every injection of morphine for at least ten weeks; and lastly they showed (ibid., 1927, **32**, 413) that morphine delays the emptying of the stomach by a decrease in both the tone and the frequency and amplitude of its peristaltic waves. Finally, Gruber and Robinson (ibid., 1929, **37**, 101) demonstrated that all these effects take place whatever happens to be the initial tone of the bowel.

These and many similar observations make it clear that morphine produces a long-lasting increase of intestinal tone unassociated with spasm in both the small and the large intestine. True peristalsis is increased for short periods and gastric emptying is definitely delayed. In fact, in addition to its narcotic properties, it possesses all the attributes desirable in a drug for the prophylaxis and treatment of "paralytic ileus," with the exception of a specific action righting altered gradients. The delay in gastric emptying prevents the rapid passage of swallowed gas and stomach contents from adding

to the distension, while the increase in tone produced by its action directly on the smooth muscle of the gut aids the prevention of distension and helps the passage of gas and fluids through an area of flattened gradients, and the limited peristalsis engendered is not sufficient to build up local distension greatly in the area of ileus, but it does help to empty the bowel below it. It was for these reasons that we have used morphine in all our cases, and particularly after operations upon the intestine, and the statistics presented do show "that the paralytic ileus rate was lowered after morphine therapy started" and that "the statistical analysis can only be claimed to show that the decrease was greater than could easily be ascribed to chance, and that it was not due to inherent differences in the two series as regards age, parity, and type of operation or indication." We are aware that these statistics are only suggestive, but we would point out that the cases were not handled differently in the two periods in other respects, as Prof. Burn infers, except, of course, for such things as alteration in bread during the war, which has not apparently affected the incidence of ileus in other cases.

Finally, we should like Prof. Burn to comment further on the value of the parasymathomimetic drugs. We have used them in both man and experimental animals, and our observations suggest that they give rise to marked intestinal contractions, which last about 45 minutes, but we have not observed any true peristalsis produced by them or lasting increase of tone. They often give rise to nausea and colic, as well as having definite dangers for the debilitated patient by lowering the blood pressure. It may be that repeated small doses are of value, but their effect does not appear to us to be as satisfactory as morphine, even in cases well enough to tolerate it, and the reaction after its use, especially if it has failed to relieve distension, is often severe, and we have completely given up using it.—I am, etc.,

City General Hospital, Sheffield. JUDSON T. CHESTERMAN.

Penicillin and Rubber Tubing

SIR,—Tubing supplied as of "natural rubber" may be as destructive of penicillin as some synthetic rubbers have been found to be. We have recently tested four samples of tubing from different manufacturers, all stated by the makers to be "natural" rubber. The following method was used.

A weak solution of penicillin was enclosed in a sterile length of each of the tubings for 24 hours at 16° C., and as a control some of the same solution was kept in a glass tube for the same time at the same temperature. Potency assays were then made by the plate method described in the M.R.C. War Memorandum No. 12. The following results were obtained:

Penicillin	*Zone of Inhibition of Staphylococcus*
In glass	10 mm.
„ tubing No. 1	9 mm.
„ tubing No. 3	6.5 mm.
„ tubing No. 4	6 mm.
„ tubing No. 5	5 mm.

The conclusion is that this or a similar test should be employed before deciding that any tubing is suitable for use in penicillin administration apparatus, whether this tubing be supplied as a "natural" or as a "synthetic" rubber.—I am, etc.,

E.M.S. Hospital, Bridge of Earn. M. E. MORGAN THOMAS.

Pernicious Anaemia and Cancer

SIR,—I must add strong support to the recommendations of Dr. J. F. Wilkinson (Nov. 10, p. 664) concerning the establishment of haematological clinics for the diagnosis and treatment of persons suffering from pernicious anaemia. Patients who have been injected with many gallons of liver extract over a period of years (often at considerable personal expense) following a doubtful diagnosis of pernicious anaemia are becoming all too common; I have encountered three within the last few weeks. It should be remembered that a high colour index is as frequently a sign of inaccurate haematology as it is indicative of a macrocytic anaemia; furthermore, pernicious anaemia cannot be diagnosed by examination of a blood film, as so many people seem to believe. Additional investigations such as sternal puncture, fractional test meals, reticulocyte and platelet counts, and spectroscopical examinations are easily carried out and should be routine.

It is obvious that unless cases of pernicious anaemia are properly investigated at the outset any conclusions as to the incidence of malignant or endocrine disease are of little value; in fact, one of the three doubtful cases of pernicious anaemia which I mentioned earlier now has a gastric carcinoma. Dr. Wilkinson's cases have been fully investigated before diagnosis, and should therefore provide a very accurate basis for discussion.

The low incidence of malignancy and relatively increased frequency of diabetes mellitus are in agreement with my personal experience, but I look upon the hypothyroid symptoms often met with as part and parcel of the obesity caused by desiccated stomach preparations; the B.M.R. prior to treatment is often very slightly raised.—I am, etc.,

Broadgreen Hospital, Liverpool. WILLIAM K. TAYLOR, Pathologist.

Significance of the E.S.R.

SIR,—While agreeing with the conclusion of Drs. D. G. McIntosh and D. M. Keay (Oct. 27, p. 584) on the significance of the E.S.R. "that no other test having an error of such magnitude would be tolerated in practice," we would stress the difference between the high degree of possible technical accuracy and the unreliability as a clinical test due to inability to interpret the figures so produced. Medicine is like a seaman with an accurate sextant which he can manipulate mechanically but from which he cannot derive his bearings.

Let us get back to fundamentals. The E.S.R. is a measurement of the rate at which the erythrocytes separate down in a column of blood in which clotting is prevented by an anticoagulant. The rate of fall varies from individual to individual according to the power of the plasma to cause aggregation of the erythrocytes into clumps, which, compared to the single cell, have a greater mass relative to surface area—the larger the clumps the faster the fall. Thus the E.S.R. measures ultimately the aggregating power of the plasma; and, with a technique based on hydrodynamic principles, as a measure of this power the accuracy of the test is high. This aggregating power varies with changes in each of several components of the plasma (protein, lipoid, urea, etc.).

The clinical use of the E.S.R. is based on the assumption that in organic changes in the body there occur changes in the complex of factors which can affect the E.S.R., and that the change parallels the increase and decrease in the intensity of the pathological process. The individual factors may alter in ways which have an opposing effect; each factor may be affected to a different degree in one disease process; any factor may be affected to different extents by different diseases of equal clinical severity. Until there is a means to separate the behaviour of the parts from that of the total complex the interpretation of the E.S.R. must remain uncertain, and with it the present doubtful reputation of the test.

Returning to technique. If this be standardized for anticoagulant, tube length and diameter, temperature, and packed cell volume, and if we take only that portion of the fall/time curve where the velocity is a maximum, we have an *absolute* value which can be subjected to hydrodynamic investigation (Whittington[1]) and which is directly comparable with a similarly produced value in any other laboratory. Every departure from this high standard towards "simplification for clinical use" is a retrograde step which introduces further variable quantities to be considered in the final clinical evaluation. That the position is not wholly chaotic may be due to the fact that some of these simplifications involve variables which are not independent. Fraser and Rennie[2] have produced evidence which supports such an inference as regards the packed cell volume.

However, in the viscosity we have a simpler physical property of the plasma, and this is almost entirely dependent on a single member of the above complex—the proteins. Miller and Whittington[3] have shown the close correlation between the plasma viscosity and the clinical condition in pulmonary tuberculosis—a correlation which further tests have merely emphasized. Changes in the viscosity mirror the changes in the pathological processes very much more closely than the E.S.R. estimated by even the best technical method.

Whittington[1] has already indicated the complex "periodic" relationship existing between the E.S.R. and the plasma vis-

cosity. Our new results have confirmed this and allowed us to construct two-dimensional charts in which an individual case can be plotted by the simultaneous estimation of the E.S.R. (sextant) and plasma viscosity (chronometer). (We may say that these charts eliminate the problem of the normal with an apparently pathologically high E.S.R., and its opposite—the case with obvious disease and an E.S.R. within the limits ascribed to the normal controls.)

Our results for 650 combined E.S.R. and viscosity measurements show that any simple yet reliable correlation of the E.S.R. with the pathological changes is out of the question. While it is evident from our tests that the E.S.R. (under controlled conditions) measures a definite physical property of the plasma, the variations of this property are so complex that their true interpretation is beyond the scope of present biophysical and biochemical knowledge. Details of these results and of our technique are at present in the press.[4] We hope shortly to publish an abridged version in this country.—We are, etc.,

JOHN HOUSTON.
JOHN HARKNESS.
R. B. WHITTINGTON.

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SIR,—In their letter (Oct. 27, p. 584) D. G. McIntosh and D. M. Keay express opinions about the E.S.R. which will meet with wide agreement. I think, however, that they are too condemnatory. All phthisiologists will be able to recall cases where serial skiagrams remain unchanged with an apparently minimal lesion, negative sputum, and good general condition, and where there is considerable doubt as to activity. In such cases I think that an E.S.R. reading below 10 mm. in 1 hour (original Westergren) is a useful aid to a decision in favour of inactivity. In an institution of this size (450 beds) the number of such cases is not negligible. Serial E.S.R. is also of value if it is either increasing or decreasing in rate, but I entirely agree that the single E.S.R., whether read at 1 hour or 2 hours, is far too inaccurate to be of value.—I am, etc.,

V. COTTON-CORNWALL,
Deputy Medical Superintendent.

Fazakerley Sanatorium, Liverpool.

SIR,—I was much interested in the letter of Drs. D. G. McIntosh and D. M. Keay on the subject of the sedimentation rate, and can agree with them that it is not easy to give definite figures for normal rates.

To take their points serially. The method employed should certainly be stated, though this is of less importance if the rates are not rapid. The column length is the important point, and most methods give similar results for normal cases, as it is the earlier onset of slowing that gives lower rates in the short-tube methods, and this does not occur in the first hour when the rates are slow. When they are rapid, however, it may make a considerable difference.

With regard to the use of citrate or oxalate, it seems of little importance which is used so long as the fact is stated. "Westergren" means "citrate," so no further mention of the anticoagulant used is needed. While citrate certainly does slow the rate slightly, this is of no importance in an empirical test if it is constantly used. Personally, I prefer it, as it is more convenient to use. I may say that I have never known the rate to be slower with oxalate; on the contrary the rate is very constantly more rapid with it. I imagine that it is the slight dilution with citrate solution that causes this.

With regard to the substantial variations in rate stated to have been obtained in normal persons, I should say that there should be the utmost reserve in accepting persons with a rapid rate as normal, and a careful following up should be made before accepting them as such. After all, a physical examination is not infallible (worse luck), and a skiagram is only a shadow.

Concerning the rates in active tuberculosis, it has been observed (Day, *Lancet*, 1943, **2**, 99) that a single-hour reading may be normal in convalescent cases, though the second-hour reading may be abnormal, and it was to secure detection of such cases that the sedimentin index was used. On the other hand, I myself have observed normal readings in the first and second hour in one or two cases where tubercle bacilli were actually present in the sputum. One can only imagine that in such cases there was a substantially walled-off cavity communicating with a bronchus. So far as the tubercle bacilli found on gastric lavage are concerned, I would recommend a perusal of a recent article (I am sorry to say I cannot recollect where it appeared) in which a number of acid-fast bacilli found in resting juices were found not to be lethal to guinea-pigs.

No one would venture to claim that any one test in medicine is infallible. We do know, however, that at least a substantial proportion of persons with rapid rates are sick, and the fact is too useful to be ignored. The number of tests I have carried out must now be nearly half-way to six figures, and I (in common with many of my colleagues) have always found it most valuable. With regard to Hilliard's dictum that he had "abandoned the use of the blood sedimentation test long ago," it is unlucky that the phraseology is identical with that of the eminent surgeon at the beginning of the century, with "aseptic surgery" substituted for "the blood sedimentation test."—I am, etc.,

J. W. SHACKLE.

Hayward's Heath.

"The Humane A.P. Refill"

SIR,—I am afraid that I cannot agree with Dr. Alastair Allan's quotation (Nov. 3, p. 607) that "humanity and common sense call for anaesthetization of the needle tract" in giving refills for cases of artificial pneumothorax. I myself held this view until I gave up the use of local anaesthetic, since when I have found that patients invariably prefer their refills without preliminary anaesthetization.

The following technique is found to be most satisfactory. "Local" is used during the induction and until there is an adequate pleural space. This, in the absence of severely restricting adhesions, is generally confirmed by *x*-ray examination during the third week. After that a Morland needle is used. This, with an outside diameter of only 0.9 mm. and a spear-headed point, causes less pain than the raising of an intradermal wheal. The skin and pleura are penetrated with one quick movement, as, naturally, the amount of pain inflicted depends upon the speed of insertion.

I have been most interested in this problem, having several doctors as patients, and, although the idea may sound barbaric, in practice it is remarkably simple and humane. One patient states that, providing the operator is experienced and the needle sharp, it is "absolutely painless," the whole procedure is shorter, and there is no aching around the needle puncture afterwards. The danger of air embolism can also be avoided by leaving the manometer on while giving the refill. This prevents the air being injected under undue pressure, and the swing of the manometer can be observed the whole while, thus making certain that the needle stays in the free pleural space. I do not believe that the danger of pleural shock in an established A.P. is greater when local analgesia is disregarded. However, this is contrary to common teaching, and I shall be grateful to have the views of your readers upon this subject.—I am, etc.,

C. F. HAWKINS,
Medical Superintendent.

Preston Hall, Maidstone.

The Child with Frequent Colds

SIR,—I agree with Dr. G. C. Milner (Nov. 10, p. 667) that the familial incidence of catarrh of the upper respiratory tract is of great interest to general practitioners, but in addition to the environmental chance of infection by atmospheric spread and by a lowered resistance of individuals consuming a similar poor diet, one must also consider the factor of heredity. The inheritance of a narrow nasal passage favouring complete occlusion if engorged must predispose to chronic sinusitis, and it is known that some families are prone to otitis media, presumably due to a particular anatomical pattern of their Eustachian tubes and middle ears.

Age plus duration of infection with the chances of further spread of inflammation and general tissue sensitization to a septic focus explain the varying manifestations of the catarrhal process in members of the same family. For instance, a mother with long-standing tonsillar sepsis and infective arthritis has a young child with antral infection, a poor appetite, and occasional attacks of vomiting, an adolescent child with chronic

suppurative otitis media and a chronic laryngitis, while the father and a third child, who "takes after him," escape merely with frequent "colds" because both have a wider formation of the nose.

It should be profitable to conduct a large-scale clinical and bacteriological investigation into these varying manifestations in the small communities of the family.—I am, etc.,

Ilford. R. N. C. SMITH.

SIR,—Like Drs. Mallinson and Milner, I should like to express my appreciation of the careful and painstaking work of Drs. Irwin and Frankel, and my astonishment at the conclusion which they have drawn from utterly inadequate evidence. There are many other possible causes which need to be investigated; they have made a bare mention of a "normal diet" (does "normal" mean "satisfactory" or "usual"?); there is not a word about clothing, not a word about coddling, and not a word about the nervous child. In short:

"There are more things in heaven and earth, Horatio, than are dreamt of in your hospitals."

The conclusion which I would draw, Sir, is the inadequacy both of materialistic philosophy and of the hospital outlook, and I would plead for the association in these investigations of some members of the profession who can look at these children as individual human beings and not merely as "cases."—I am, etc.,

Wandsworth. F. GRAY.

Surgical Catgut

SIR,—The statement of Mr. John Hosford (Nov. 10, p. 668) that he "has yet to use a British make of catgut which can be relied upon to be consistent in size and strength" is not supported by records of tests made in these laboratories on British-made surgical catgut. It must be admitted that before 1944 the gauging of one manufacturer was often markedly different from that of another. This lack of uniformity, however, is being eliminated by the introduction of new standards for size and strength (*B.P.C.* Additions and Amendments to Part I, 1944, pp. 7–10). Since 1939 there has been improvement in the strength and in the accuracy of gauging of the products of many of the leading British manufacturers. The uniformity attained by them to-day is at least as good as that attained by the American producers. Surgical catgut, however, being a biological product, is not stable for long periods. Under cool conditions of storage it may lose little strength over a period of five years, but samples of the same batch stored at higher temperatures may show considerable deterioration in strength by the end of three years from the date of manufacture.

It must be remembered that the strength and size of surgical catgut are determined in large part during the manufacture of the raw (unsterilized) catgut. British manufacturers of this material export considerable quantities to the U.S.A., where it is processed, packed, and some of it re-imported (before the war) to this country as sterilized catgut. If the British raw product did not satisfy the American manufacturers for its strength and evenness of gauge it is unlikely that they would have continued to purchase it for years before the war and also during the war years.

It would be most unfortunate if the good work done by British manufacturers during the war to keep up supplies of good-quality surgical catgut were to pass unrecognized. The new *B.P.C.* standards introduced only last year may not be the most perfect, but they set out a minimum standard and have been accepted by the manufacturers. It is rare to find material manufactured in 1945 and bought in the open market which on testing fails to comply with these standards.—I am, etc.,

Bernhard Baron Research Laboratories, Royal College of Surgeons, W.C.2. JOHN BEATTIE.

SIR,—Mr. John Hosford's complaint about the surgical catgut is timely, but it would have had more weight had he been more sure of his facts. Many surgeons have been distressed by the variability of catgut thicknesses, and by the uncertain tensile strength of the specimens which they have had perforce to use in the last few years. The regauging of catgut by the subcommittee of the British Pharmaceutical Codex Revision Committee has made matters much worse, and I have been at some pains to inquire into the circumstances.

It appears that the E.M.S. distribution of surgeons up and down the country brought these men into contact with brands of catgut to which they were unaccustomed. News of their difficulties reached the Ministry of Health, and at the request of their Principal Medical Officer the subcommittee on ligatures and sutures submitted agreed standards for surgical catgut. I am informed that this subcommittee contained no practising surgeon, and that the conclusions reached were opposed to the opinions of the representatives of that catgut manufacturing firm which might well be presumed to know more about the subject than anybody else. The Ministry of Health must be held responsible for the omission of surgical representatives, but it was surely the business of the Royal College of Surgeons to know what was going on and to make its own opinions felt. The surgeon is the consumer of catgut, and had one such had a voice in the proceedings of this committee we should not now be in our present ridiculous position.

In effect the sizes of catgut which were most commonly used—No. 0, No. 1, and No. 2—are now lumped together with No. 2/0 and No. 3, and the whole five sizes are redistributed among three new gradings—No. 2/0, No. 0, and No. 1.

I disagree strongly with Mr. Hosford's opinion that only American catgut was satisfactory before the war. I have used the same brand of English catgut for 12 years and, except for a brief period during the war when the makers' peculiarly thorough methods were impeded by shipping difficulties, I have never had anything but complete satisfaction and reliability until this ridiculous imposition by the subcommittee on ligatures and sutures.—I am, etc.,

Birmingham. FAUSET WELSH.

SIR,—I read with astonishment and regret the misleading and inaccurate letter from Mr. John Hosford (Nov. 10, p. 668). Imported brands of surgical catgut may have enjoyed some popularity before the war, but it is entirely incorrect to assert that this commodity needed or needs to be largely imported. Since 1944 British manufacturers have produced their catgut in sizes conforming with the standards adopted by the *B.P.C.*, which agree with, and allow no greater variation than, the standard American gauges. The uniformity so achieved has proved acceptable to all concerned.

The British suture industry has not only a magnificent war record for high quality and for meeting exceptional demands in circumstances of the greatest difficulty, but is now in a better position than ever before to supply all demands as to type, gauge, strength, etc., that may be made upon it by surgeons in Britain or any other part of the world.—I am, etc.,

ELDRED J. HOLDER,
Chairman,
London, E.C.2. The Sterilized Catgut Manufacturers' Association.

Glandular Fever with Neutropenia

SIR,—Having read the description by Lieut.-Col. Gerald Slot and Major F. D. Hart of the appearance of neutropenia in a case of glandular fever (Oct. 13, p. 495) I was surprised to find that in the final paragraph the diagnosis was changed suddenly to infectious mononucleosis. I feel that the use of the term "infectious mononucleosis" in this connexion is undesirable and may lead to confusion; they have not proved that the condition was, in fact, infectious mononucleosis.

Careful examination of the evidence presented by them shows there is much at variance between it and that presented by the majority of other writers when discussing infectious mononucleosis. It is true that Logan[1] stated that sulphonamide administration may suppress antibody formation in glandular fever. The patient in this case was given 30 g. of sulphathiazole—the quantity stated by Price[2] to be that required to produce agranulocytic changes in a susceptible patient. Fitch[3] observes that no less than 33% of patients may show allergic phenomena, although not necessarily to a severe degree, when sulphathiazole is administered. The question, therefore, whether the neutropenia was due to an early agranulocytosis or whether the possibility of an allergic lymphocytosis had been excluded has not been fully dealt with. Stitt, to whom they refer, gives the normal lymphocytic range as 10 to 30%; in this case the levels varied from 42.5 to 78%.

Himsworth[4] raised the point that the factor of mononucleosis *per se* depends on the pathologist's division of

mononuclear cells into monocytes and lymphocytes. In order to evaluate more accurately the likelihood of obtaining a positive heterophil agglutination result the number of monocytes per c.mm. is required. He quotes as examples a value of 2,150 monocytes per c.mm. in a case with a positive result, and a value of 520 monocytes per c.mm. in a case with a negative result. Slot and Hart's case had a level varying from 159 to 528 and is thus of a low order. Again, Stitt gives the normal monocyte range as 3 to 8%. In this case the level was almost always not above normal range—3 to 10%. Bernstein[5] believes that in infectious mononucleosis the level of monocytes is at least 60% of the total white count, and that this level tends to be higher in the sporadic as opposed to the epidemic case. When describing an outbreak of infectious mononucleosis in East Africa in the *Journal of Tropical Medicine and Hygiene*[6] a monocyte level of 48 to 80% is given. Further, when describing an outbreak of this condition among a group of young Service patients in an E.M.S. hospital (the group to which Slot and Hart's case belongs) Stevenson and Brown state that 110 out of a total of 123 patients had a high mononucleosis.[7] Halcrow, Owen, and Rodger,[8] discussing eosinophilia in infectious mononucleosis, consider that the level is low at first, rising later. In the patient discussed only one reading was above the normal level of 4%.

With regard to the heterophil agglutination test itself, the authors do not state whether the titre of 1/128 obtained on one occasion was in terms of final dilution or not. Smeall[9] regards a titre of 1/128 as suggestive only. Davidsohn,[10] describing his technique, regards a titre of 1/124 as presumptive evidence only. According to the technique used by Slot and Hart their result should not be worthy of very serious consideration. Even allowing their reading of 1/128 not to be in terms of final dilution, the comparative result would then be 1/320 only.

Again, it is regrettable that no mention is made of the type of non-granular cells seen, whether classified according to Downey[11] or Israëls.[12] In discussing the differential diagnosis of the condition mention should be made of "epidemic cervical adenitis" described by Pruen[13] and Kirkland.[14]

In conclusion, it is regretted that the above criteria were not considered more fully. Infectious mononucleosis is one condition found in the group of glandular fevers, and which has certain definite characteristics; the two terms are by no means synonymous and should not be used in that manner.—I am, etc.,

Haslar. T. S. EIMERL.

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Breast-feeding to Time-table

SIR,—I have read with interest Dr. J. M. Morgan's letter on infant feeding and duodenal ulcer (Oct. 27, p. 585). We are all aware of the psychogenic factor in this complaint, and no baby who has screamed for half an hour before it receives its dinner at some appointed time can be in a psychological state to digest it when it arrives.

Slavery to time-tables is in my opinion inimical to the whole process of breast-feeding, which largely depends on the mother's placidity of mind. This cannot be maintained unless she is presiding over a contented smoothly running household. How can that be the case if everybody's arrangements have to be turned upside down for the sake of rigid adherence to the infant's schedule? The baby is an integral part of family life, and his time-table should be planned to fit in with the rest of the family. I shall give two examples. A young husband is due home for his supper at 6.30, but baby must be fed at six. The wife hurries to feed the child and prepare the father's food within half an hour. The result is that he comes home to a scrappy meal, a howling, half-satisfied baby, and an irritable wife. Small wonder that he murmurs, "Oh, Doctor, never again." Yet all this could be avoided if the infant's feed were put forward half an hour or even an hour. Again, the older children want Mummy to take them to the pictures in the afternoon, but no, she can't manage it; baby's feed is due at 2.0 o'clock prompt. They begin to feel that since he arrived Mummy is no longer a companion to them, and the seeds of jealousy are sown.

It is up to us as practitioners to help the nursing mother to arrange her life so that lactation causes the minimum of inconvenience to everyone, including herself. The baby will benefit, for babies are susceptible to atmosphere, and a contented house contains a contented baby. In conclusion, we all realize that the nursing mother requires extra rest and that present conditions of domestic help seldom allow this. Nevertheless, if she can be taught to lie down on her bed and relax completely during the feeds this will afford her a valuable amount of rest which does not interfere with her other activities.—I am, etc.,

Rotherham. ANNE M. TOMS.

Incidence of Breast Abscess

SIR,—Some very startling and challenging figures were given by Dr. A. A. Fulton in the *Journal* of May 19 (p. 693) when he states that 16% of the patients delivered in hospital in a small Scottish town eventually developed a "suppurative mastitis"—i.e., the breast was "spontaneously evacuated or was incised." The figure of 3.5% for district cases of the same type was quoted for contrast. This covered the period of the puerperium and for several weeks later. Dr. Fulton claimed that a true figure could be discovered only by following up the cases for several weeks at the child welfare clinics. His actual hospital figures were as follows:

Total confinements in hospital	748
Number of cases of suppurative mastitis	121 (16·8%)
Number of ditto in 2 weeks after delivery	12 (1·6%)

In another article (*Journal*, Oct. 13, p. 488) he gives the even more startling figure of 25% occurrence of breast abscesses in a series of 250 mothers, and says: "It is to be noted that, with few exceptions, these patients were delivered in hospital."

Redhill County Hospital, Surrey, draws maternity cases from the East Surrey area, including Sanderstead, Purley, and Coulsdon Valley. The general health of the patients is good and the standard of cleanliness is high. As Dr. Fulton reports that the greater number of his cases occurred after discharge from hospital I have made extensive inquiries at the various county clinics (post-natal and child welfare), at voluntary and small local hospitals, and from general practitioners whose patients were delivered in hospital during the period Feb., 1944, to Feb., 1945. About half replied but only three breast abscesses were reported, nor were any patients admitted into this hospital with breast abscesses. The following table sets out the incidence of breast abscesses for some years:

Year	Deliveries in Hospital	Breast Abscesses in Hospital	Occurring After Discharge
1941	780	2 (0·3%)	
1942	960	3 (0·3%)	
1943 to Nov.	760	2 (0·3%)	
1943, Nov. and Dec.	110	6 (5·5%)	
Feb., 1943, to Feb., 1944	890	0	3 (0·3%) 6 (0·7%)

I regret that Dr. Fulton does not give details of the routine treatment of breasts in hospitals under his care. The following routine is followed at Redhill:

(1) *Ante-natal.*—General cleanliness. The use of spirit, nail-brush, and creams (except in the case of crust formation) is discouraged. (2) *Puerperium.*—Engorgement of the breasts occurs in about 5% of cases, and when this happens 0.5 mg. (only) of stilboestrol is given by mouth. Within a few hours the breast is found to be functioning normally. No massage, hand expression, or hand manipulation is used. In a few cases a second dose of stilboestrol may be required. The nipple is protected by a dressing of ung. "antipeol." Tinct. benzoin. and triple dye, by trapping the infection, are regarded as a real danger and are not used on the wards. Flushed breast is treated with sulphadiazine in sufficient dosage with hot fomentations or antiphlogistine.

In the last two months of 1943 this routine was changed, and in these months an engorged breast was hand-expressed or "milked," also using a breast pump. A period of great worry ensued; there were many cases of non-suppurative mastitis, and six cases of suppurative mastitis occurred in six weeks. I am certain that great damage can be done to the delicate tissue of the breast by massage, even when very gentle, and these traumatic areas flooded with milk form a perfect culture medium for an infection. The mother returns to her home, where she has not time to give meticulous hospital cleanliness to this danger area and so a breast abscess develops. When the practice of the "art of milking or hand expression" was stopped at the beginning of 1944 the abscesses ceased to occur and there were no cases for the year Feb., 1944, to Feb., 1945.

This hand manipulation or milking of the breast is practised in many hospitals. The abolition of the practice might change the frequency of breast abscesses from 25% to a much lower figure.

I have to thank Miss Robinson and her staff of midwives for their co-operation in adhering strictly to the treatment laid down.—I am, etc.,

Redhill, Surrey. PHILLIS DINGLE.

Ergometrine for Migraine

SIR,—In the annotation on ergotamine for migraine (Nov. 10, p. 654) there is no mention of the use of ergometrine in this condition. That this newer alkaloid of ergot also has a beneficial effect in attacks of migraine is scarcely appreciated in this country, and certainly one of our well-known drug houses makes no mention of this therapeutic use in the literature supplied with its product. However, several papers have been published on this subject to which reference is made in *The Pharmacological Basis of Therapeutics* (Goodman and Gilman, 1940). Figures are quoted showing that, whereas 90% of all patients or all attacks are relieved by ergotamine, 37% are relieved by ergometrine, and a further 40% are afforded partial relief.

As ergometrine in the human subject is free from the serious toxic effects that occur from time to time with ergotamine, and as the former drug is effective by mouth in a dose of 0.5 mg. as compared with the need for giving ergotamine by injection, it would seem that ergometrine deserves more attention as a useful and safe therapeutic measure than it has had in the past. In fact, it would really be a wise procedure to give it as routine treatment, reserving the more toxic ergotamine for those cases which do not respond. Further, many people would consider 90% success with ergotamine too high a figure, while from personal experience I would have thought that the ergometrine figures, if anything, erred on the conservative side.—I am, etc.,

Physiology Department, St. Mary's Hospital, W.2. H. C. STEWART.

Galvanic Stimulation of Denervated Muscle

SIR,—The literature dealing with the place of galvanism in the treatment of muscles denervated as a result of injury to a peripheral nerve shows that such opinions as have been expressed are in the main favourable; as examples, chosen at random, we cite the memorandum published by the Medical Research Council[1] after the last war, and the writings of Pollock and Davies[2] and of Kovacs.[3] What impressed us was the paucity of direct evidence, and it was for this reason that our investigation was undertaken. We hoped to get a clear answer; if it was unfavourable then it was foolish to spend time and money administering a tedious and rather uncomfortable form of treatment; on the other hand, if electrotherapy proved to be of value then it was obviously our duty to give it to as many patients as possible. We agree with Dr. Abercrombie (Nov. 3, p. 622) that "good results may be obtained in the absence of galvanic stimulation," but if galvanism is of value then its effect will be to give excellent results in cases that would otherwise have been only good, and good results in those that would have been mediocre. No one can deny that the results of treatment of peripheral nerve injuries are still too often disappointing.

We share Dr. Abercrombie's regret in our failure to show by direct observation that galvanic stimulation of denervated muscle is of value in promoting recovery from a peripheral nerve lesion. On account of the many variables it was hard enough to find a sufficient number of comparable cases, out of a series of 1,500, for our more limited objective—namely, the demonstration that galvanism does or does not limit muscle atrophy. A full account of the work will be published shortly, and we feel sure that when Dr. Abercrombie has read it he will appreciate some of the difficulties. If functional recovery has also to be taken into account the variables—such as the level of the lesion, the extent of the gap closed by suture, and the time elapsing between injury and operation—become even more numerous; so much so that with the material at our disposal we have as yet found it impossible to demonstrate statistically that recovery was better in the treated cases, though it certainly seemed to be. Thus we fell back on the correlation of experimental and clinical evidence to which Dr. Abercrombie takes exception. Our arguments may have been badly presented, so perhaps it is permissible to restate them briefly, again making reference to a few recent papers which have a direct bearing on the question that we are seeking to answer.

1. Denervated muscle atrophies; the process is a deleterious one, increasingly inimical to good recovery.[4-7]

2. In animals galvanic stimulation retards atrophy and maintains the muscle in a condition closely resembling the normal.[5,6] The power of a muscle is roughly proportional to its weight; hence, provided that the structure of the muscle is normal or near normal, the greater its weight the better the ultimate function when re-innervation occurs. It is, of course, true, as Dr. Abercrombie says, that one of "the requisites for success in nerve suture is good apposition of the axons."

3. Functional recovery, under the simplified conditions of animal experiment, is better, especially in the early stages, when the muscle is prevented from atrophying[6] (Dr. Abercrombie is incorrect in attributing this work to one of us). Treatment did not produce significant alteration in the actual time of onset of recovery.

4. Since in animals prevention of atrophy is beneficial it is not unreasonable to suppose that it is of value clinically. The question is, Can one arrest atrophy by treatment less rigorous than that usually employed experimentally—treatment to which the average patient can reasonably be expected to submit?

5. The answer is yes.[8,9]

6. Therefore galvanism, or its equivalent, will have a favourable influence on recovery after a peripheral nerve lesion, provided that the nerve itself has been properly treated.

Dr. Abercrombie suggests that the activity induced by repeated galvanic stimulation may retard regeneration of the nerve, because of the katabolic changes in the stimulated muscle. Has he any evidence to support this alarming statement? If he has, then we shall have to go very carefully, for it may well be that activity in neighbouring normal muscle is equally harmful. In a patient recovering from a partial lesion ought we, perhaps, to prevent activity in the parts of a muscle that are innervated lest that activity should delay re-innervation of the remainder? In the flexor profundus digitorum, which is innervated by the median and ulnar nerves, might activity of the half of the muscle supplied by the intact nerve hinder recovery in the other paralysed half? Experimental evidence does not support this suggestion.[6] Dr. Abercrombie has observed "that the interruption of galvanic treatment has occasionally been followed by an obvious improvement in the rate of recovery"; this is most important, since it may well throw light on an aspect of regeneration of nerves that has not, so far as we know, received consideration. May we suggest that Dr. Abercrombie should publish his evidence, and in the meantime allow us to see the case records on which his observations are based.—We are, etc.,

Wingfield-Morris Orthopaedic Hospital, Oxford.
E. C. SHIRLEY JACKSON.
RUTH E. M. BOWDEN.
H. J. SEDDON.

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Anaesthetic Risks

SIR,—Let me admit at once that I know of no proof in the scientific acceptance of the term that there is a "greater or lesser degree" of damage to the brain cells when their oxygen requirements are fully met. But man does not live by bread alone. We do many things successfully for which as yet there is no scientific proof. Assuming that we may class chloroform, ether, and alcohol together as narcotics—and they are usually so classed—then there are a number of facts which suggest that it is unlikely that a patient can be deeply anaesthetized without some trace of the action of the anaesthetic being left on his brain cells. T. S. Clouston says: "The injurious effects on the brain structure and functions of a steady habit of taking too much alcohol extending over years is admitted by every physician and can be proved microscopically by any good modern pathologist." William MacDougall found, in a series of experiments demanding his attention and the use of his muscles in co-ordination therewith, that after 1 oz. of whisky he made 11% more errors and after 3 oz. 54% more errors than when they were conducted without. Ralph M. Waters, one of America's leading anaesthetists and advocate of cyclopropane, says: "I have come gradually to realize two facts: the first that relief from pain is purchased always at a price, and the second that the price in both morbidity and mortality does not greatly differ whatever the agent or agents used." All this is in accordance with one's experience in life and was put long ago in the phrase: "Whatsoever a man sows that shall he also reap."

If, then, it can be proved by any good pathologist that repeated doses of alcohol have injurious effects on the function and structure of the brain, when do they begin? Can we suppose that the brain takes no notice of the first hundred thousand and then suddenly starts to register? It would be more reasonable to suppose that each dose, even the first—and anaesthesia to the point of muscular relaxation is a good first dose—leaves its mark. We are in the habit of regarding functional disturbance as due to a reversible organic change; it may be that this explanation is merely a euphemistic expression for the lack of sufficiently delicate instruments to record slight changes, or of powers of observation. Think of the thousands of times skilled professors of bacteriology looked at mouldy cultures without spotting the effect of moulds on bacterial growth. It is probable that all anaesthetics, even local or spinal, have some deleterious effects; but in the hierarchy of nerve cells those of the brain are the highest: why damage them when there are alternative methods?

One more point. Dr. A. C. Douglas (Oct. 27, p. 583) uses the words "when the oxygen requirements are fully met." How do we know that they are? Anaesthesia is generally supposed to be due to a process of suboxidation. The haemoglobin may be 100% oxyhaemoglobin, but such evidence as is available suggests that the anaesthetic, like Horatius, holds the bridge between the outside of the cell and the inside. This action is indeed the *sine qua non* of anaesthesia.—I am, etc.,

E. FALKNER HILL.

Epidemic Diarrhoea and Vomiting

SIR,—May I add a few words to the most interesting article by Drs. Brown, Crawford, and Stent (Oct. 20, p. 524). I was struck by an identical outbreak of epidemic diarrhoea and vomiting in Mansfield between May and August, 1945. I had the opportunity of treating several scores of cases, which did not differ in their clinical picture from those described by the three authors.

What puzzled me most was the fact that all those cases concerned panel and other working-class patients only. I failed to notice any similar case in any of my well-to-do family patients. My first impression was that the disease could have been related to the excessive consumption of ice-cream or fish-and-chips. Further interrogation of successive patients did not reveal any proof for this assumption, however. The duration of the cases observed by me varied between a few days and a couple of weeks, and here again I think it was the general standard of life as well as personal cleanliness of the family which was the determining factor.

As for treatment, I would like to stress that I refrained from ordering any laxatives or sulphaguanidine. I found that a 24-hours fast (except ample intake of soda-water, barley-water, or cocoa made with water and saccharine together with mist. kaolin. ʒss t.d.s.) followed by a two-days diet of milk, milk puddings, and dry toast, gave very satisfactory results.—I am, etc.,

Mansfield, Notts. D. LAUTERBACH.

Acroparaesthesia

SIR,—In an article on acroparaesthesia Dr. F. M. R. Walshe says (Nov. 3, p. 596), with reference to its causation, that "the fact provides a clue that no one is interested to follow to its logical conclusion—namely, that it suggests a mechanical origin of the syndrome." Ten years ago in *The Osteopathic Lesion* (Heinemann), on pages 81, 84, and 85, I and W. Hargrave-Wilson drew attention to the fact that this condition was probably of mechanical origin and differentiated it from Raynaud's disease. The most likely mechanical lesion is that of acute or chronic joint strain (osteopathic lesion) of one or more of the joints of the upper dorsal or lower cervical vertebrae. The joint lesion causes the soft tissues in the area to be congested and held in tension. The symptoms are probably caused by pressure or the initiation of a somatico-arterial reflex.

Dr. Walshe further states that "when the desperate patient has sought relief from practitioners not on the *Medical Register* 'manipulation of the spine' has still further added to her torments," and that complete rest is essential in treatment. My experience with manipulation for over twenty years is quite the contrary. There are, unfortunately, without doubt many individuals practising manipulation who have no qualifications for the title of osteopath, and in whose hands results such as Dr. Walshe mentions are to be expected.

While highly satisfactory results are obtained by osteopathic manipulation without complete rest, it is important to impress on the patient that the cause is mechanical, and that repeated strain to the neck and upper dorsal must be avoided. The common causes of strain, apart from direct trauma, are lifting and carrying, prolonged writing, sewing, knitting, car driving, etc. The reason for the increase in incidence in recent years is obvious. Complete rest will naturally relieve the symptoms, but if the condition is mechanical, as Dr. Walshe agrees it probably is, the symptoms will sooner or later return unless the underlying mechanical abnormality is corrected.—I am, etc.,

London, W.1. GEORGE MACDONALD.

Potassium Thiocyanate in Hypertension

SIR,—The reference by Dr. T. Izod Bennett (Nov. 10, p. 661) to potassium thiocyanate as being of benefit in hypertension is of interest, and he may like to know that as a result of examining a large number of lead workers, in whom hypertension is so often found, my experience is that this salt, which is common in normal saliva, diminishes and tends to disappear from the saliva of those men who give evidence of lead poisoning.—I am, etc.,

Swansea. G. ARBOUR STEPHENS.

Phytic Acid and Calcium Deficiency

SIR,—I should like to rectify the impression given by your annotation. The facts are as follows: If a subject is given first white bread and afterwards brown bread the calcium balance becomes negative in the latter. This has nothing to do with phytic acid at all, as we have shown (Harris and Vernon, *J. Physiol.*, 1943, **102**, *Proc.*, Oct. 2). If a subject is in the habit of eating the brown fortified loaf, and he is afterwards given brown bread of the same extraction but without the added calcium, there is no negative calcium balance. Here are the actual figures which we have obtained from a subject after eating brown bread to which calcium was not added. Calcium intake 0.737 g., calcium output in urine 0.172, in faeces 0.565 g.; in urine and faeces 0.737. Output 100% of the intake.

It is clear that if phytic acid were the cause of the negative calcium balance, and the added calcium were to prevent this negative balance, the eating of brown bread without the added calcium should have produced a negative balance, which it did not. This in itself shows conclusively that the whole phytic acid theory is only a figment of the imagination. You say in

your annotation that the phytic acid is lost by baking. If this is so, why then was the calcium added to brown bread? and why has Widdowson, the co-worker of McCance, stated recently in the *British Medical Bulletin* that the reason why rickets is prevalent in Dublin is because of the whole-meal bread?—I am, etc.,

I. Harris.

The Discovery of X Rays

Sir,—In your editorial on the discovery of *x* rays (Nov. 3, p. 608) you state: "The *Lancet* (Jan. 11, 1896) was the first medical journal in this country to comment on Röntgen's discovery, and in its leading article the wit of Mr. Samuel Weller was invoked to pour a cold douche upon the supposed possibilities.... Meanwhile the *British Medical Journal* (Jan. 18, 1896) came out with a carefully considered and laudatory article by Prof. Schuster, of Manchester, and assessed the new discovery at its proper medical valuation. From that date onwards all journals contained numerous articles on *x* rays and their applications."

May we point out that your first statement is incorrect. In the *Medical Press and Circular* of Jan. 8, 1896, under the heading "Electrical Photography in Surgery," there is the following note:

"The news of a remarkable discovery in photography is reported from Vienna. Briefly it consists in the discovery of a new conductor of light. Professor Röntgen, the well-known professor of the Würzburg University, has succeeded in photographing metal weights shut up in a wooden box, without showing anything of the casing on his negative. He is also said to have photographed the bones of the hand, all the soft parts being invisible. He photographs by means of light of an exhausted Crooke's pipe, through which an inductive current is passed. The discovery appears to be so far that the rays in question penetrate wood and flesh, but not bone or metal. It is surmised that photographs of the kind mentioned may have a valuable practical application in the discovery and location both of fractures and of bullets. If this discovery be sustained it will certainly take a first place among the many marvels of this scientific age. Those of our readers who are versed in electrical research may have already heard of Professor Röntgen's interesting researches."

Priority, therefore, not merely in comment but in correct appraisal, belongs to the *Medical Press and Circular*, and may we add that the then editor, Dr. David Walsh, gathered together a group of enthusiasts who met in the offices of this journal in King William Street, Strand, at which meeting the Röntgen Society was founded with Prof. Silvanus Thompson as president, and the editor as honorary secretary. Furthermore, the editor's book on the subject, *The Röntgen Ray in Medical Work*, published by Baillière, Tindall and Cox, was, we believe, the first book in the world on this subject.

In the interests of historical accuracy we hope you will find room for this correction.—We are, etc.,

Cecil P. G. Wakeley.
G. E. Breen.

London, W.C.2.

The annual report of the Medical Officer of Health for Liverpool (Dr. W. M. Frazer) tells the same story as that of the other large towns, indicating a very satisfactory position from the point of view of vital and epidemiological statistics in the sixth year of the war. The infant mortality of 57 to 1,000 births is much the lowest recorded in the city, comparing with a rate of 81 in 1943. The rate has fallen to little more than a quarter of the level at which it stood at the beginning of the present century. The number of deaths from infective diseases, not including diarrhoea and influenza, was 0.3 to the thousand of population. This low rate is attributed to two factors—first, the great reduction in the number of cases of diphtheria, the result of the extensive campaign for diphtheria inoculation carried out during the last two years; and, secondly, the almost complete absence of typhoid fever, which was responsible for only one death in 1944. The figures for pulmonary and non-pulmonary tuberculosis indicate a return towards the lower rates obtaining before the war. (The death rates for pulmonary tuberculosis during the years 1936–9 ranged from 0.81 to 0.85 to the thousand, and in 1944 the figure was 0.9.) During the war an increase of early syphilis in both sexes, but most strikingly in the female population, has been noted. In males the number of cases in 1944 was 417 and in females 278, comparing with 187 and 25 respectively in 1939. An intensive effort has been made in Liverpool to encourage cow-keepers to supply cleaner milk.

Obituary

T. SAXTY GOOD, O.B.E., M.R.C.S.

By the death of Thomas Saxty Good the profession has lost one of the pioneers of modern psychiatry, and Oxford medicine in particular a beloved and honoured colleague. Not least will he be mourned by his many patients, to whom he gave so much comfort and skilful guidance.

Good belonged to a medical family; his father, J. Saxty Good, who died at an early age, was a dentist, and Thomas was the ninth member of his house to be educated at St. George's Hospital. He qualified at the early age of 22, and after holding various house appointments joined the Littlemore Asylum as medical officer. This proved to be his home for the next forty years, as after eleven he succeeded Dr. Sankey as medical superintendent. During the 1914–18 war the asylum, afterwards known as the Ashhurst Mental Hospital, was converted into a hospital for shell-shock cases, etc., under his command. Besides this important work Lieut.-Col. Good, as he then was, acted as consulting psychiatrist to the 3rd Southern General Hospital, was chairman of the recruiting board, and, while looking after the welfare of their patients, did all he could to protect the interests of his absent colleagues. In recognition of his work he was awarded the O.B.E. (Military) in 1919. Early in 1918 he started a clinic for nervous disorders at the Radcliffe Infirmary—one of the pioneer out-patient clinics of its kind. A few years later the University of Oxford gave him an honorary degree and appointed him university lecturer in psychiatry and nervous disorders. In 1931 Good was president of the Royal Medico-Psychological Association. When the B.M.A. met at Oxford in 1936 he was president of the Section of Neurology and Psychological Medicine, and he was a member of the B.M.A. Committee on Mental Health in 1938–40. In the City of Oxford he co-ordinated the work connected with the care of mental defectives, and was active in instituting with the Education Committee a clinic for child guidance, and afterwards for many years served as a member of the Child Guidance Council and committee of the Institute for Scientific Treatment of Delinquency.

Good was very humane in the treatment of his patients, allowing them out on parole and keeping the wards unlocked; and despite the initial misgivings of others he was certainly justified by results. Though he was a man of many interests, a welcome and entertaining companion, a good sportsman with both gun and rod, and a really talented artist in wood carving, Good never completely retired. During the last war especially his experience and knowledge made him a valued member of medical boards, and he gave his services to the hospital as an assistant where he had formerly been in charge. The loss of his companionship, humour, and unstinted help will be felt by all his contemporaries. E. M.

DOUGLAS ARTHUR CROW, M.B., Ch.B.

Mr. Douglas Crow, ear-nose-and-throat surgeon to the Royal Sussex County Hospital, Brighton, whose untimely death on Nov. 3 has distressed his colleagues, friends, and patients, was a striking figure and a brilliant and unusual personality—surgeon, artist, craftsman, philosopher, and archaeologist. His most notable quality was his intransigent integrity, which sometimes led his mind into queer bypaths and made some people find him "difficult"; but his every action was illuminated by an uncompromising honesty of purpose. As a craftsman "Tim" Crow was supreme, whether as surgeon and bronchoscopist or in the various arts which he practised. His surgical technique was confident, gentle, swift but unhurried; his opinion was founded on wide experience and reading, and as a consultant he was always reliable and helpful, if opinionated; he had never taken any higher surgical qualifications, and saw no particular reason why he should, for his training had been thorough and prolonged. He illustrated his own articles and books, being particularly fond of coloured chalk drawings, and he made and carved his own dining-room furniture as well as other admirable examples of cabinet-making. When he published, in 1942, a rather depressing novel, *Unwitting Crowd*—though it had some passages of rare beauty—he did it in his own way: he printed it himself, drew and made the blocks for the illustrations, bound it himself in leather, and presented it to a few chosen

friends. At one time archaeology was, after surgery, his chief pursuit, and he walked fast and hatless along the green roads of the Downs, dug with Dr. Curwen in prehistoric hill-forts, and filled his house with pieces of ancient pottery. He was an early and keenly interested visitor to Soviet Russia, though his first enthusiasm waned. He had considerable knowledge and appreciation of Chinese art, and his presidential address to the Brighton and Sussex Medico-Chirurgical Society in 1938, entitled "A Blind Man with a Lantern" (afterwards printed in pamphlet form), was a study of the Chinese philosophy of life, which appealed to his own fastidious outlook. He had served in the war of 1914–18 as a captain, R.A.M.C., though he never spoke of it, and in 1938 he circulated a pamphlet entitled "The Pacifist Faith of a Surgeon," for he had learned to hate all war, and 1939 depressed him deeply.

Douglas Crow, born in 1889 at Loughborough, was educated at Fort William and Edinburgh University, where he had a distinguished career, winning several prizes and qualifying in 1911. He became house-surgeon at Doncaster Royal Infirmary and at the Sussex Throat and Ear Hospital, Brighton, and went into general practice at Brighton, though keeping up a connexion with the Throat and Ear Hospital. The late Mr. Arthur Hutchison of Brighton encouraged him to specialize in otolaryngology, and after having served as registrar to the Central London Throat, Nose, and Ear Hospital and having been one of the first Englishmen to attend Chevalier Jackson's course in bronchoscopy at Philadelphia, he was appointed honorary surgeon to the Sussex Throat and Ear Hospital in 1920 and to the Royal Sussex County Hospital in 1925. In 1927 he published a book on *The Ear, Nose and Throat in General Practice*, a particularly stimulating and well-illustrated production, not a formal textbook but a vigorous expression of personal opinions, with emphasis on principles. In 1930 he opened a discussion on bronchoscopy and oesophagoscopy in the Section of Laryngology of the Royal Society of Medicine, characteristically beginning with an account of his one (and only) failure; he frequently reported cases of interest at meetings of the Sections of Laryngology and of Otology and in the medical journals, including this *Journal*. He had a large consulting practice extending all over Sussex, held appointments as consulting surgeon to Haywards Heath Hospital, the Royal Alexandra Hospital for Sick Children, Brighton, and the Brighton Infirmary, and will be greatly missed.

DR. FREDERIC RYOTT PERCIVAL TAYLOR, for many years medical superintendent of the East Sussex County Mental Hospital, Hellingley, died at Eastbourne on Oct. 5. He was born in Berkshire, near Newbury, on March 2, 1865, and from the local grammar school went with an entrance scholarship to Westminster Hospital, where, after qualifying M.R.C.S., L.R.C.P. in 1889, he was house-surgeon. He graduated M.B., B.S. in 1891, and took his M.D. after serving as resident medical officer at Queen Charlotte's Hospital. Dr. Taylor's long experience of mental defect and disorder began as assistant medical officer at the Earlswood Asylum, and at the L.C.C. Mental Hospital, Claybury. He was then medical superintendent of the Darenth Home for Mental Defectives, and in 1902 became resident physician and medical superintendent at Hellingley Mental Hospital. In 1922 he was appointed physician for nervous disorders at the Princess Alice Memorial Hospital, Eastbourne, and neurologist to the Ministry of Pensions for the Brighton area. He joined the B.M.A. in 1891, and held office as vice-president of the Section of Neurology and Psychological Medicine at the Eastbourne Annual Meeting in 1931. The funeral service was held at Hellingley Hospital Chapel on Oct. 11.

The sudden death from cerebral haemorrhage at the early age of 47 of Dr. R. P. S. LEWER, of Knayton, Thirsk, on Oct. 20, cast a gloom over the area. He was a native of Dorset, and son of the late Dr. Edward Stewart, of Burnley-in-Wharfdale. He was a grandson of General Robert Lewer, Director of Medical Services at Gibraltar, and great-great-grandson of the Rt. Hon. Charles Kendal Bushe, Lord Chief Justice of Ireland and Master of the Queen's Bench. Educated at King's School, Canterbury, Dr. Lewer served in the war of 1914–18, later qualifying in Dublin L.R.C.P.&S.I., L.M. He practised for the past six years at Knayton in Yorkshire, where he settled down very happily to country work. A man of upright, serious, and kindly character, he will be greatly missed. The sympathy of the profession goes out to the widow and two little children he leaves behind.—W. MCK.

Universities and Colleges

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Buckston Browne Dinner

The Buckston Browne Annual Dinner of Fellows and Members was held at the College on the evening of Nov. 15, when a large company was received by the President, Sir Alfred Webb-Johnson, and the Vice-Presidents, Mr. C. Max Page and Mr. W. H. Ogilvie. The principal guest was Viscount Addison, Secretary of State for the Dominions. After the health of the King as Visitor of the College had been honoured, the President began on a note of sorrow for the death of Sir George Buckston Browne in his 95th year on Jan. 19. This was the first of the dinners he endowed at which they had not had the pleasure of seeing and hearing him. Besides being a great and loyal friend of the College, Buckston Browne was one of its three most munificent donors, ranking with Sir Erasmus Wilson and Sir William H. Collins; his memory would always be honoured by Members and Fellows. The President greeted Lord Addison not only as a Minister of the Crown but as one of themselves present in his own right as a Fellow. This was a family party and also a house-warming, and he welcomed home those who had returned to civilian life, saying that the College was intensely proud of them. He quoted words spoken to him by Field-Marshal Montgomery in tribute to the medical and nursing services for their invaluable work in maintaining the morale of the Army. What of the College to which they had come back? It had suffered terribly by bombardment, but the foresight of his predecessor, Sir Hugh Lett, had saved much. Turning to Lord Addison, the President became for the moment an outspoken mentor of the Government on the essentials of a sound national health service, in which there must be the highest quality of professional work, freedom with reasonable discipline, and willing partnership. Lord Addison, after a tribute to the Medical Research Council, a body financed by the Government in which he had had a hand at the start, said that the beginning of a comprehensive health service would be an immense task, and to build it up would take years. Those members of the Government concerned in the matter knew the vital importance of giving incentive to efficiency and of gaining the good will of those who worked the service. Mr. Julian Taylor was called upon to say a few words about his experiences as a prisoner of war in the Far East, and paid a moving tribute to the medical men who worked with him in captivity.

Council Meeting

At a meeting of the Council of the College, held on Nov. 8, Diplomas of Membership were granted, jointly with the Royal College of Physicians of London, to R. H. B. Mills, J. D. Huntley, R. D. Price, and C. T. Ross, and to the 184 successful candidates whose names were printed in the report of the meeting of the Royal College of Physicians of London in the *Journal* of Nov. 3 (p. 630). Diplomas in Medical Radiodiagnosis were granted, jointly with the Royal College of Physicians of London, to G. A. D. Gordon, P. P. Hauch, W. J. Latham, C. F. Parry, and D. G. Wollin.

Mr. P. H. Mitchiner was re-elected a member of the Court of Examiners. Sir Frank Colyer was elected Charles Tomes Lecturer, and he will give two lectures on a dental subject in July, 1946. Dr. H. A. Sissons (Melbourne) was appointed a Leverhulme Research Scholar to work in the pathological department of the College.

The following hospitals were recognized for the resident surgical post required of candidates for the Final Fellowship Examination: Dudley Road Hospital, Birmingham, resident surgical officer and house-surgeon; Burton-on-Trent General Infirmary, resident surgical officer; Halifax General Infirmary, resident surgical officer and house-surgeon; Burnley Municipal Hospital, resident surgical officer.

UNIVERSITY OF OXFORD

Theodore Williams Scholarship in Pathology

There will be an examination for the Theodore Williams Scholarship in Pathology in the Sir William Dunn School of Pathology on Monday, Dec. 3, at 2 p.m. It will consist of a written paper and a viva voce examination. The viva voce examination for short-list candidates will be held on Friday, Dec. 7, at 2 p.m. The scholarship is open to any member of the University of Oxford, whether man or woman, who on June 30, 1945, had not exceeded twenty-six years of age and had attended a course in general pathology and bacteriology in the Sir William Dunn School of Pathology either in the academic year 1944–5 or in the academic year 1943–4. Those intending to present themselves for this examination should inform the Professor of Pathology before Wednesday, Nov. 28.

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—[1 5] K. E. Cooper, [1 4] J. Luder, [1 2 3 5] J. Swale, [1 3] R. W. E. Watts, Mary C. V. Alabaster, K. D. Allanby, P. S. Allenby, Sheila W. Anderson A. R. Anscombe, G. J. E. Ansell, R. N. Austin, G. M. Bailey, Agnes W. Baker, P. B. Banaji, D. N. Baron, H. F. McG. Bassett, Joan R. K. Bastable, R. A. Boland, G. E. Bond, Lesley M. McL. Bowen, A. F. Bromwich, D. E. M. Brown, A. J. Buller, Joyce B. Burke, D. E. St. J. Burrowes, M. F. Butler, M. Caine, K. A. A. Campbell, K. H. Chin, C. J. M. Clark, K. S. Clarkson, Sylvia D. Corben, A. V. Craig, A. R. Darlow, Elizabeth E. Davies, J. S. Davis, S. Davis, J. W Dickson, Aileen P. M. Dring, Kathleen A. D. Drury, E. M. C. Dunlop, Viola M. Frymann, Joan R. Gomez, G. E. Griffiths, G. R. S. Grogono, V. L. Guillem, Ruth A. Haes, Kathleen M. Harding, W. J. Ll. Harries, M. A. Harris, W. C. Harris, L. M. Harrison, W. E. Hassan, Audrey Hazelden, Josephine M. R. Heber, Joan F. Heffernan, A. R. Helm, J. Henneman, M. D. Hillel, B. H. Hogben, J. E. Holgate, E. R. A. C. Hollingbery, Margaret E. Holness, Pamela M. Horne, Betty E. Howarth, J. D. Huntley, A. F. Huston, Patricia L. Hutchinson, M. S. R. Hutt, Ruth C. J. James, R. M. Jenner, R. G. G. Jones, T. J. Jones, H. E. M. Kay, M. B. King, S. Lall, Jean V. Lang, V. B. Levison, J. W. Lewis, Jeanne C. Lister, Helen M. Littler, Joan V. MacDonald, J. D. Martin, R. W. P. Mellish, P. C. Meyer, Jean Mitchell, P. R. Montgomery, P. L. F. Mortimer, C. R. Neve, P. F. New, K. A. Newton, Patricia C. O'Brien, D. O'Keeffe, L. H. Pimm, Joan M. Price, J. M. Pugh, N. C. Rees, D. B. Richards, P. A. Ring, C. G. Roberts, K. B. Roberts, K. W. Robinson, F. F. D. Rosenthal, C. F. Rycroft, C. Sanger, G. E. Schofield, F. J. Sharrod, J. F. Shaw, S. R. Shaw, Elsie M. Sibthorpe, P. H. S. Silver, R. B. Sloane, C. J. W. Soutar, C. J. Stevenson, L. Stirling, B. Strickland, D. W. Stuart, P. D. Sutton, J. M. Talbot, C. G. Teverson, D. L. C. Thomas, Phyllida M. M. Thornton, D. E. Truscott, Kathleen L. Turner, P. P. Turner, R. S. Walker, P. T. J. C. P. Warner, A. D. Weatherhead, R. G. Welch, O. G. Williams, F. R. M. Young, R. Youngman.

[1] With honours. [2] Distinguished in pathology. [3] Distinguished in hygiene and forensic medicine. [4] Distinguished in medicine. [5] Distinguished in applied pharmacology and therapeutics.

UNIVERSITY OF DUBLIN

The Board of Trinity College, on the nomination of the University Council, has appointed Prof. R. A. Q. O'Meara, M.D., Sc.D., F.R.C.P.I., to the chair of pathology in succession to Prof. J. T. Wigham, M.D., F.R.C.P.I., who has resigned. Dr. O'Meara was elected a Fellow of Trinity College in 1941, and in the following year was appointed to the chair of experimental medicine.

The Services

Capt. R. H. S. Lee, R.A.M.C., has been appointed M.B.E. (Military Division) in recognition of gallant and distinguished services in the field.

The following appointments and awards have been announced in recognition of gallant and distinguished services in Burma:

C.B.E. (Military Division).—Brig. (Local) J. Bruce, Brig. (Acting) I. G. W. Hill, T.D., and Brig. (Temp.) D. F. Panton, R.A.M.C. Col. (Temp.) W. A. Burki, M.B.E., I.M.S.

O.B.E. (Military Division).—Lieut.-Cols. (Temp.) H. Gass, G. G. Mer, J. H. Moffett, T. A. Pace, and A. V. Stevens, *M.C.*, R.A.M.C.

M.B.E. (Military Division).—Lieut.-Col. (Acting) W. H. Wolstenholme, Major (Temp.) A. Milne, and Capt. P. J. R. Davis, R.A.M.C. Lieut.-Col. (Temp.) S. M. Paw, Army in Burma Reserve of Officers.

Bar to the D.S.O.—Major (Temp.) B. G. A. Lilwall, D.S.O., R.A.M.C.

M.C.—Capt. A. M. Ogilvie, R.A.M.C. (killed in action).

The following have been mentioned in dispatches in recognition of gallant and distinguished services in North-West Europe: Brig. (Temp.) Q. V. B. Wallace, C.B.E., M.C., late R.A.M.C., Brig. (Temp.) A. E. Porritt, C.B.E., Brig. (Acting) G. K. Fulton, M.B.E.; Cols. (Temp.) K. Fletcher-Barrett, O.B.E., R. Rutherford, T.D., and I. A. M. Paton, O.B.E.; Lieut.-Col. G. B. Mitchell-Heggs, O.B.E.; Lieut.-Cols. (Temp.) J. C. Caird, S. J. Chesser, M.B.E., P. J. H. Clarke, T. H. Crozier, E. A. Jack, O.B.E., R. B. Myles, O.B.E., R. W. Power, T.D., and K. G. W. Saunders; Lieut.-Col. (Acting) R. G. Evans, M.B.E.; Major J. S. Kelleher; Majors (Temp.) P. M. Acheson, A. K. Borland, M.B.E., D. S. Buchanan, G. P. Charles, A. E. Cooper, M.C., A. B. Donald, G. B. Forbes, W. Hobson, J. S. Lancaster, M.C., J. L. Linacre, B. T. Mann, E. H. Moore, J. F. D. Murphy, W. A. B. Nicholson, R. F. G. Ormrod, T. G. Risley, T. D. Ross, W. C. Ross, J. E. Semple, K. D. Stewart, M.B.E., G. F. Valentine, A. W. J. Kirton-Vaughan, L. B. Wevill, A. Young, and J. M. Zabokrzycki; Majors (Acting) D. J. A. Alban-Jones, T. Black, and N. A. Mossendew; Capts. G. L. McC. Blair, J. Booth, E. M. Callander, S. H. Chazen, R. B. Coles, E. G. A. Crawshaw, J. B. Farquhar, R. W. L. Hall, E. B. Harrison, F. J. Hebbert, B. C. H. Luker, B. W. MacDonald, J. S. MacRae, J. S. O'Dwyer, J. Y. W. Russell, K. E. Rymer, J. Slater, R. S. Sunderland, and H. B. Young; Lieuts. W. Brownsey, P. A. Hann, P. F. Holley, D. G. Jones, J. G. Searle, and J. K. Tizard, R.A.M.C. Lieut.-Cols. H. A. Ansley, G. A. Copping, F. G. Kergin, and F. W. Schroeder; Majors C. W. Dales, F. J. McLean, J. H. Shaw, and J. E. Williams; Capts. R. E. Bell, A. E. Conley, N. C. Delarue, A. C. Derby, C. M. Leighton, A. H. MacLennan, R. E. G. Place, and J. C. G. Young, R.C.A.M.C.

Repatriated.—Fl. Lieut. F. A. Forbes, R.A.F.V.R.; Capt. J. F. McGarity, I.M.S.

Medical Notes in Parliament

Conditions in Mental Hospitals

Mr. JOHN LEWIS opened on Nov. 6 a discussion on mental hospitals. He said that this year approximately 127,000 persons suffering from mental disorders were in our hospitals and homes. The majority were treated in wholly or partly rate-aided institutions. The staffs of these institutions worked under most difficult conditions due to lack of accommodation and understaffing. It was only possible for them to skim the surface of treatment because their time was taken up in ordinary routine. The big figure he had given for people in these institutions represented only a fraction of those in need of mental treatment and attention. Psychoneuroses occurred in 2% of the population. General practitioners said that 30 to 50% of their practice was concerned with people suffering from functional nervous disorders. In general hospitals 17% of those referred to general medical out-patient departments suffered from psychological illness without serious organic component.

What inducement was there for patients to enter mental hospitals to-day voluntarily to receive treatment? The remoteness of the places, with high walls, bleak premises, and locked doors, made clear to those able to think that those entering might never return. This was despite the fact that 40% of patients who entered mental institutions returned to their family cured, and 20% returned home much improved. These figures were more encouraging because people very often came to mental hospitals in a late stage of mental illness and often in the last stages of senile dementia. In mental hospitals 70% of the inmates suffered from chronic or senile dementia and could not benefit from any form of treatment other than care and attention, which were lavished on them by a devoted staff. To amend the system public opinion must be educated.

There were approximately 1,000 to 3,000 patients in the average mental hospitals. Fever hospitals had 144 sq. ft. per bed, general hospitals 120 sq. ft., but mental hospitals only 50 sq. ft. In some parts of these hospitals beds were so close together that it was impossible to stand between them. The most terrible indictment of the system was the mortality from tuberculosis in 1942 in mental institutions, which was fifteen times as high as in the normal population. These high figures had been reduced where the overcrowding had been reduced and where the diet had been improved. There was no reason why the incidence of tuberculosis in mental institutions should be higher than among the normal population. Most of the hospitals were very old and out of date; patients were not classified according to their type of mental disease but, as a rule, by their degree of physical infirmity, by the degree of noise, and by habits—whether clean, dirty, destructive, or violent. Epileptics and potential suicides were scattered throughout the whole hospital.

In many hospitals true convalescent wards did not exist. Patients who were presumed to be convalescent were usually sent into the admission ward, but often into the chronic wards if the permanent residents were clean and quiet. This atmosphere was not encouraging for the patient trying to adjust himself to normal circumstances. Hospital wards were largely utilized for the chronically infirm and not for patients who came for treatment. They might include people who had been bed-ridden for 50 years. These were not the proper conditions in mental institutions for people who were actually ill and needed treatment.

The patients in most institutions were fed from centralized kitchens and the food often arrived cold. The low standard of diet had its origin in the fact that years ago it was believed that low feeding would keep a patient quiet. That system still operated to-day in some places. So far as the medical staff was concerned the average was 1 doctor to from 300 to 700 patients. That was insufficient to allow doctors time for research in psychiatry. Patients who could afford to pay had more cheerful surroundings and better furniture but no better treatment because it was not available. Much more money must be provided for improved treatment, nursing, surroundings, and research. Two categories of mental hospitals should be built: those to deal with the 70% of chronic cases which would not improve; and those for the treatment of acute cases, in which the most modern scientific methods would be employed. It would not be necessary to discard the present institutions. Inmates who could not benefit from treatment should be left to end their days there. New hospitals must be built near to universities or medical schools. A medical superintendent should be a teaching member of the university. Where there was no chair of psychiatry one should be established; there

should be teaching hospitals in the vicinity with adequate out-patient facilities and a psychiatrist provided by the mental hospital. There must be two classes of nurses, one of which would look after chronic patients. Criticizing the present method of certification whereby the general practitioner called in the relieving officer and the patient might be brought before a magistrate without the advice of an outside doctor, Mr. Lewis said that in his own constituency it was the practice of the magistrate to bring with him an outside doctor for certification.

Lack of Accommodation for Neuroses

Dr. STEPHEN TAYLOR agreed in general with Mr. Lewis, but said he had over-painted the picture. Many mental patients got tuberculosis because it was extremely difficult to feed those who were suffering from depression. The incidence of this disease in mental hospitals could not be blamed on the staff or the facilities. The overcrowding had been due in part to the existence of the E.M.S., but was a serious factor in mental treatment at the moment. The temporary treatment section of the Mental Treatment Act did not work badly and enabled enormous numbers to be treated in mental hospitals without certification. There was a great shortage of out-patient or advisory clinics, and in-patient facilities for the neurotically ill scarcely existed. With the exception of the Maudsley Hospital serving South London there were mostly no beds for neurotic patients. General hospitals should have admission blocks for all types of psychiatric patients where people could be treated and put into their appropriate classes. The old-fashioned mental hospital was an anachronism. If the country was to have mental hospitals they should be small units, perhaps the size of the Bethlem Royal Hospital, with 250 beds where a medical staff could properly look after the cases. More could be done by boarding out the chronically insane for whom further treatment was not possible.

The country was short of adequately trained general practitioners who could make a psychiatric diagnosis. As psychiatrists came from the Forces this could be made good, but it would be 20 years before every general practitioner could make a good psychiatric diagnosis unless refresher training for general practitioners was started quickly. The country was short of research centres. The Tavistock Clinic should be developed. The national psychiatric service could only be dealt with as part of the main National Health Service and needed to be tackled on the same lines as other specialized services with out-patient facilities and specialists to visit the home. Voluntary registered mental hospitals such as Bethlem and the Retreat at York should be brought into a National Health Service, but he did not know how this should be done. Of the private mental hospitals run for private profit some were all right but some were far from right. Broadmoor, which was not a Ministry of Health concern, was an anachronism, a bad place for the patient, and a terrible strain on the staff. Its patients should be put under the ordinary service. The staff of the mental hospital service were isolated spiritually and physically. The remedy was to move them about between the general hospitals, the epileptic hospitals, the mental defective colonies, and even the prison medical service.

Replying for the Ministry of Health, Mr. KEY said he would be the last to assert that everything was well with the mental hospital services. He had nothing to say in favour of the Poor Law atmosphere, which existed around a number of these institutions, but the problem was not best dealt with by exaggerating the conditions. What had been said in the debate would be carefully considered in connexion with the organization of the health service to which Mr. Bevan was giving attention. Mr. Key pointed out that the number of people under care had fallen between Jan. 1, 1939, and Jan. 1, 1945, from 133,000 to 127,000. The general improvement in the social standards of the people resulting from continuity of employment had led to a decrease in mental illness. One of the ways of tackling the problem was to maintain the general standard of life. The overcrowding in institutions resulting from the transfer of beds to the E.M.S. was beginning to remedy itself. Between Jan. 1 and Oct. 1 this year 2,273 beds had been restored to the mental hospital service.

The number of people now training for the nursing profession was greater than it had ever been, and the shortage of nurses was due to the increase in such services as day nurseries and radiography. He thought it was wrong to say there was no reason why there should be no more than a normal rate of tuberculosis among people in mental hospitals. These people were spending too much of their time in institutions and so they had a predisposition towards this disease. But since 1941–2 there had been a decrease not only in the incidence of tuberculosis but in its death rate among those in the institutions. Of the 101 public mental hospitals in this country 60 had provided separate admission units and separate convalescent units. With the return of peace and more staff, conditions would greatly improve. He could not agree that diet in these institutions had been brought down to the public assistance level. The steady reduction of the death rate was partly due to the attention given to the diet. Of patients who had been admitted or were being admitted now nearly 50% were voluntary patients. That number would not go to the hospitals if the black picture that had been painted was really indicative of the conditions.

Medical Man-power: British and Alien

Major SYMONDS asked on Nov. 8 how many doctors of British nationality were engaged in civilian practice in England and Wales and the average number of patients per doctor. Mr. BEVAN replied that the last analysis made by the Central Medical War Committee in February related to all doctors on the permanent *Medical Register* without distinction according to nationality. It showed that the number of doctors in civilian practice of all kinds in England and Wales was 27,177, or in general practice only 14,337, representing a ratio to civilian population of one to 1,393 and one to 2,640 respectively. The number of temporarily registered alien doctors in employment, including a few in Scotland, was 798. Nearly half of these were of German or Austrian nationality. The next largest groups were Czechs and Poles. He was unable to give the average age, but 525 out of the total were over 40. He had no information on how many temporarily registered alien doctors had returned to their own countries nor on how many were likely to do so in the near future.

Major SYMONDS also asked whether the Minister, in view of the shortage of doctors, was taking steps to ensure that the Temporary Registration Order of 1941, by which refugee doctors were permitted to obtain posts in hospitals or to work as assistants to medical practitioners, was extended beyond Feb., 1946. Mr. BEVAN pointed out that the Emergency Laws (Transitional Provisions) Bill included provisions for the continuance of the Order beyond the date mentioned.

It was stated by Mr. EDE that among the doctors in South Wales at present were six Austrians (two of them women), three Germans, and one Czechoslovak. The three Germans and the two Austrian women were on the register of persons who were only permitted to take certain limited forms of medical work. Seven of these doctors had applied for naturalization, but their applications had all been suspended in accordance with the general policy that had been in operation since 1940.

Call-up of Doctors

On Nov. 15 Col. STODDART-SCOTT asked the Minister of Health why, in view of the fact that there were 2.57 doctors per 1,000 in the Army and 2.27 doctors per 1,000 in the R.A.F., and only 0.74 per 1,000 in the civil population, over 370 doctors had been called up into the Army and R.A.F. since VE-Day; and why they were still being called up in considerable numbers. Mr. BEVAN answered that continued recruitment of doctors to the Forces was necessary in accordance with the general principles set out in the White Paper on the Reallocation of Man-power issued in Sept., 1944, in order to increase the releases of medical officers under Class A of the demobilization scheme and to compensate for releases under Class B. The great majority of those called up were young men recently qualified who had held hospital appointments for six or twelve months.

Short-service Commissions and Release

Mr. LAWSON informed Mr. Lipson on Nov. 13 that a doctor appointed to a short-service commission before the war was liable to retention during the present emergency under Article 213 of the Royal Warrant for Pay, etc., of the Army, and was retained subject to the conditions which Mr. Lawson had previously set out. A doctor appointed during the war was eligible on completion of his period of five years' short-service commission for immediate release if his age-and-service group had already been released, or alternatively for release with his age-and-service group when it was reached, provided he had not been appointed to a permanent commission and had not applied to defer his release or to serve on for a minimum period of two years' post-war service with gratuity.

Foot-and-mouth Disease from Butcher's Meat.—Major TURTON on Oct. 15 asked the Minister of Agriculture what action he proposed in view of the warning given by the chief veterinary officer on May 4, 1945, of the danger of outbreaks of foot-and-mouth disease occurring on the premises of butchers distributing South American meat. Mr. TOM WILLIAMS said the only practicable way in which the danger could be reduced was by observing and enforcing the existing regulations. Every effort to secure stricter enforcement was being made, and with some apparent success. There had been only two outbreaks of foot-and-mouth disease so far this year on butchers' premises, and three others that might in some way be associated with butchers.

Leprosy in British Empire.—Mr. GEORGE HALL said that although accurate figures were not available it was estimated that out of 2,000,000 lepers in the British Empire 700,000 lived within the Colonial Empire and the greater part of these in Nigeria. In that colony a big antileprosy campaign was being undertaken. Application by the Nigerian Government for a further £170,000 for the Colonial development and welfare work was under consideration. The Government hoped to provide more money in the future.

Analgesia by Midwives.—Mr. BUTCHER inquired on Oct. 25 what amendments had recently been made by the Central Midwives Board to their rules concerning the presence of a second person at the time of administration of analgesia for the relief of pain during childbirth. Mr. BEVAN said the rules were, with his assent, being altered to permit the second person to be anyone acceptable to the patient and considered suitable by the midwife. The requirement that the second person must have a specified qualification or experience was being withdrawn.

Totally Blind War Casualties.—Some 350 Service men and women were totally blinded during the war and are in receipt of 100% disability pensions.

Notes in Brief

Medical information disclosed by a Ministry Medical Board is not refused to a member of the medical profession if needed for treatment purposes. Where there is an appeal to the Pensions Appeal Tribunals an appellant is supplied with a statement of the relevant facts of his case, including his medical history as known to the Ministry of Pensions.

High-extraction and wholemeal flour are available to all bakers at the same price as National flour.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* measles and scarlet fever were more prevalent, the rises over last week's totals being 74 for measles and 65 for scarlet fever. There were 89 fewer cases of acute pneumonia, and 36 fewer of dysentery.

The largest local rise of scarlet fever was in Staffordshire, where the total went up by 37. The chief feature of the returns for measles was a rise of 37 in Carmarthenshire (Llanelly R.D. reported 22 cases). Yorks West Riding reported 33 more cases of whooping-cough than last week, and London 26. Diphtheria notifications in Lancashire went up by 25, the disease having increased 100% in this county since the beginning of August, compared with 62% for the whole country.

The only fresh outbreak of dysentery of any size was in Sussex, Chichester M.B. 12. The other large returns were Lancashire 49, London 40, Warwickshire 27, Glamorganshire 10.

In *Scotland* notifications of dysentery and acute pneumonia went up by 23 and 27 respectively, but decreases were reported as follows: scarlet fever 36, measles 19, whooping-cough 13. Edinburgh reported 10 more cases of dysentery than last week, and Glasgow 17.

In *Eire* the incidence of diphtheria went up by 33, and measles by 59. The rise in diphtheria was general throughout the country, but the increase in measles was due to Dublin C.B., where the notifications rose from 42 to 90.

Annual Report for Northern Ireland, 1943

The birth rate was 24.2 per 1,000 during the year, and was the largest rate recorded since 1920. Infant mortality was 78 per 1,000 births, and, with the exception of 1940, when the rate was 86, was slightly higher than any since 1936. Maternal mortality was 3.17 per 1,000 births, and, with the exception of 1942, when the mortality was 2.96, was the lowest on record. The general death rate was 13.4 per 1,000, this being 0.1 above the record low rate of 1942. The death rate for all forms of tuberculosis was 91 per 100,000, compared with 104 and 97 in the two preceding years.

Quarterly Returns for England and Wales

The birth rate during the second quarter of the year 1945 was 16.6 per 1,000, compared with 18.9 for the June quarter of 1944, and 15.9 for the average of the five second quarters preceding 1944. Infant mortality was 41 per 1,000 live births, this rate being 11 below the average of the ten preceding June quarters. The general death rate was 10.5 per 1,000, compared with 10.9 for the second quarter of 1944; there were 4,982 fewer deaths than the average of the second quarters for 1939–43.

Week Ending November 10

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,621, whooping-cough 1,118, diphtheria 573, measles 445, acute pneumonia 463, acute poliomyelitis 33, cerebrospinal fever 37, dysentery 212, paratyphoid 5, typhoid 2. Three cases of typhus fever were notified: London, Hampstead 1, and Kent, Royal Tunbridge Wells M.B. 1, and Tonbridge R.D. 1.

No. 44

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Nov. 3.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1945 (a)	(b)	(c)	(d)	(e)	1944 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	35	2	20	2	—	42	3	24	4	—
Deaths		1	1				1	—		
Diphtheria	585	32	188	93	23	633	12	169	120	30
Deaths	4	—	3	—	—	8	—	1	—	—
Dysentery	211	40	89	1	—	256	38	90	1	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	—	—	1	—	—	—	—	—	—	—
Deaths		—					—			
Erysipelas			51	6	2			55	14	5
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				50					39	
Deaths	52	7	21	13	4	45	3	7	17	5
Measles*	496	32	52	105	4	4,827	80	307	27	145
Deaths	1	—	—	—	—	4	1	2	—	—
Ophthalmia neonatorum	61	5	10	—	—	74	5	14	1	1
Deaths										
Paratyphoid fever	6	1	1 (B)	—	—	3	1	1 (B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal†	458	28	5	3	1	520	25	10	3	4
Deaths (from influenza)	13	2	—	2	—	18	3	2	—	2
Pneumonia, primary			189	13				179	20	
Deaths		29		8	6		31		10	8
Polio-encephalitis, acute	1	—				—	—			
Deaths		—					—			
Poliomyelitis, acute	24	1	—	2	1	14	—	4	1	—
Deaths		—					—			
Puerperal fever		4	6		—		4	21		—
Deaths										
Puerperal pyrexia‡	146	6	9	3	1	155	7	13	1	—
Deaths		—					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,819	149	317	25	49	2,149	56	359	42	63
Deaths	1	—	—	—	—	3	—	2	—	—
Smallpox	1	1	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	9	—	1	3	2	5	1	3	4	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	1	—
Deaths				—	—				—	—
Whooping-cough*	1,041	82	62	28	5	1,135	49	82	13	11
Deaths	5	3	—	—	1	7	—	2	—	—
Deaths (0–1 year)	334	36	61	30	23	332	30	53	42	14
Infant mortality rate (per 1,000 live births)										
Deaths (excluding stillbirths)	4,209	593	595	177	102	4,352	584	596	207	106
Annual death rate (per 1,000 persons living)			13·5	11·4	§			13·7	13·4	§
Live births	6,641	862	800	385	276	6,653	545	896	320	274
Annual rate per 1,000 persons living			16·0	24·8	§			18·2	20·8	§
Stillbirths	185	22	29			228	19	39		
Rate per 1,000 total births (including stillborn)								42		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

§ Owing to movements of population, birth and death rates for Northern reland are still not available.

Medical News

Dr. W. E. Chiesman has been appointed Treasury medical adviser on the retirement of Sir Henry Bashford on Dec. 6.

A conference of the Hospital Contributory Schemes Administrators Association will be held at the Royal College of Nursing, Henrietta Place, Cavendish Square, W., to-day (Saturday, Nov. 24,) at 2 o'clock. Mr. H. E. Griffiths, chairman of the executive committee of the British Council for Rehabilitation and honorary consulting surgeon to the Ministry of Supply, will give an address and show the film, "Rehabilitation in a Royal Ordnance Factory."

The National Association for the Prevention of Tuberculosis has arranged a discussion on "Can the tuberculous be trained in industrial design, arts and crafts?" to be held in the Hastings Hall of B.M.A. House, Tavistock Square, W.C., on Thursday, Nov. 29, at 2.30 p.m., with the Duchess of Portland in the chair. The speakers include Sir William Crawford, Mr. Philip James, director of the Council of Arts, Mr. H. W. Yoxall, and Dr. W. C. Fowler. Admission by ticket only, from the N.A.P.T., Tavistock House North, Tavistock Square, London, W.C.1.

The British Institute of Philosophy (University Hall, 14, Gordon Square, W.C.1) has issued a programme of lectures to be given during the Michaelmas and Lent terms. The course includes a lecture on Nov. 29 by Prof. H. Dingle on "Main Problems of Natural Philosophy"; and the Manson Lecture on Dec. 14 by Dr. W. Russell Brain on "The Neurological Approach to the Problem of Perception." All the lectures may be attended by members of the general public free of charge, on application to the Director of Studies at the address given above.

A Conference on "Homes and Hostels of the Future" arranged by the National Council for the Unmarried Mother and her Child will be held in the Queen Mary Hall, Y.W.C.A. Central Club, Great Russell Street, W.C.1, on Thursday, Nov. 29, at 10 a.m. The speakers include Dr. Dorothy Taylor, Dr. John Fenton, Dr. Letitia Fairfield, and Lieut.-Col. Albertine Winner. Tickets (2s. 6d.) may be had from the general secretary, N.C.U.M.C., 117, Piccadilly, W.1.

Sir Henry Dale, M.D., P.R.S., will deliver a series of three lectures on "Recent Developments in Chemical Therapeutics" before the Royal Institution (21, Albemarle Street, W.) on Tuesdays, Dec. 4, 11, and 18, at 5.15 p.m. In the first lecture he will discuss "The Beginning: Dyes, Arsenicals, Antimonials, etc."; in the second "Sulphanilamide and its Derivatives"; and in the third "Penicillin and Other Antibiotics."

There will be a clinical meeting of the Medical Society of the L.C.C. Service at Lambeth Hospital, Brook Drive, S.E., on Thursday, Dec 6, at 3 p.m., when members of the staffs of Lambeth and St. Giles' Hospitals will demonstrate cases.

The Chelsea Clinical Society has arranged a reopening dinner meeting, to be held under the presidency of Dr. Desmond McManus, at 6.30 for 7 p.m. on Tuesday, Dec. 11, at the South Kensington Hotel, Queen's Gate Terrace. All members who would wish to attend are asked to signify their intention to the secretary—Mr. A. Rugg-Gunn, 18, Harley Street, W.—and are asked to restrict their guests to those who may be regarded as potential members.

The following promotions have been made in the London County Council's mental health services: Dr. A. B. Stokes to be medical superintendent of the Maudsley Hospital, Denmark Hill, S.E.; Dr. A. C. Dalzell to be medical superintendent of Friern Hospital, New Southgate, N.; Dr. J. F. MacMahon to be medical superintendent of The Manor, Epsom.

There are many nursing orderlies who on release from the Royal Air Force are desirous of continuing their association with the medical and dental professions. Many could be suitably employed as secretaries, receptionists, and secretary-attendants to private consultants, medical practitioners, and dental surgeons. A register of such personnel is held by the Commandant, Medical Training Depot and Establishment, Royal Air Force Station, Halton, to whom applications may be made.

A Save the Children Fund relief unit has been assembled in London ready for departure for Malaya; its medical officer is Dr. R. W. Ross, who has seen service in tropical waters with the Navy.

Lieut.-Col. F. L. McLaughlin, M.D., has been appointed neuropsychiatrist to the British Ministry of Pensions and to St. Vincent's Hospital, Dublin.

American ambulances used in this country through the war years are being distributed to hospitals. On Nov. 12 the first of them was received by the General Infirmary at Leeds. Another ambulance was sent to Bradford, and a third to York.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Rorschach Test

Q.—*Could you tell me briefly what the Rorschach test is and what objective information it is likely to yield? Could it, for example, establish a suspected diagnosis of psychoneurosis? I know that the method can be used only by somebody trained in it, but would also like to know whether it is widely used by British psychiatrists.*

A.—The Rorschach test consists of a series of symmetrical patterns such as are made by folding paper over a large irregular ink-blot. The Rorschach patterns were originally made in this way, and subsequently photographed and printed. The patterns are shown to the subject, and he is asked to "see" in them any figures he can imagine. Intellectual capacity is shown by the ability to organize the whole, or large parts, of the ink-blot into a single figure which has at the same time a convincing quality. Schizophrenia may be indicated by the appearance of bizarre and unlikely figures. Hypochondriasis may show itself in the recurrence of anatomical images, etc. In the hands of the skilled interpreter the test can give reliable and valuable information on normal and abnormal traits; it would certainly be possible to make a reasonably sure diagnosis of psychoneurosis on the basis of the test alone. Despite the high repute the test enjoys, it is used by only very few British psychiatrists; it takes a long time to administer and interpret, and both training and experience are required of the interpreter.

Incidence of Types of Dysentery

Q.—*What has been the relative incidence of the different types of dysentery in the British Isles during the last few years?*

A.—The notifications published by the Registrar-General are not tabulated by the type of dysentery. An approximation of the various types can be obtained from the returns of the E.P.H.L.S. The following distribution was obtained from these returns:

Type	Per 1,000 Total Cases
Sonne	892
Flexner	75
Newcastle	28
Amoebic	3
Schmitz	0.4
Shiga	2

Caution must be used in drawing any inferences from these values. The returns of the E.P.H.L.S. cannot be taken as representative, since they do not cover the whole country; some areas are almost completely covered and some are not included. Also the returns include cases from the Services. These military cases probably have a different distribution of types from that in the general population.

Inheritance of Retinitis Pigmentosa

Q.—*A man suffering from retinitis pigmentosa has hitherto refrained from having a child because of the fear that it too might suffer from this horrible disease. He and his wife want to know what risk is involved. If it is too great they will adopt a baby. One of the patient's sisters is similarly affected, but apart from this his father and mother, and, so far as he knows, all other relatives, are normal.*

A.—Retinitis pigmentosa may be due to any one of several genes (some of them partially sex-linked, though that is not of practical importance in the present connexion). Dominant inheritance is ruled out by the history given, and in any event is exceedingly rare. Sex-linked transmission is also rare, and is ruled out by the sex of the affected sib. The great bulk of instances of retinitis pigmentosa are due to a recessive gene. The affected sib and the normality of all other relatives leave no reasonable doubt that this is the mode of transmission in the present instance. The patient must pass on the gene for the condition; but only if his wife happens to be a carrier can a child receive the requisite double dose and so be

affected. The chance of her being a carrier is remote—hundreds to one against—so the chance of a baby's being affected is very small indeed.

The case would be entirely altered if the husband and wife were blood relatives. If, for example, they were first cousins she would stand a one-in-four chance of being a carrier, with a one-in-eight probability that any child would be affected.

One possibility should be mentioned, though only to be discussed. Could the affected persons in the present generation owe their abnormality to a dominant mutation and so pass it on to half their offspring? Even apart from the fact that there are two of them, the odds are many thousands to one against.

An important point of principle remains. Any child will receive the recessive gene from the father and so must inevitably be a carrier. Is it right to perpetuate the gene, with the chance that in some future generation it may meet its like and a sibship with retinitis pigmentosa appear once again? In my view this is not a sufficient reason for refraining from parenthood. If all of us but knew what undesirable recessives we carried, and adopted so conscientious an attitude towards posterity, the birth rate would indeed show a catastrophic decline.

This couple can therefore be told (unless they are cousins) that the risk is very small—only one in some hundreds. They should take that risk and have their own child.

The Law and Sterilization

Q.—*A woman aged 35 has had nine children, whose ages range from 15 years to 8 months. She is anxious to have no more pregnancies, but various methods of birth control have been unsuccessful. She is in hospital now for a colpoperineorrhaphy for a moderate degree of prolapse and complains also of backache, pains in the groins, and some epimenorrhagia. She and her husband are constantly asking for a sterilizing operation to be performed. Is this ethically right or justifiable? What are the chief considerations to be borne in mind when patients insistently request sterilization?*

A.—Ethically, the doctor's first duty is to do his best to preserve the patient's life and health. If legal considerations are laid aside, he is justified in sterilizing if he is satisfied that it is the best course in the patient's interest, though doubtless he will feel he owes a duty to obtain the husband's consent if possible. There is no reason to suppose that this ethical principle conflicts in any way with the law of the land.

A citizen of this country may do anything that is not forbidden by law. No statute, nor any reported decision of a judge, forbids a doctor to sterilize a woman with her consent. The only remaining possibility is that to do so offends against some hitherto unformulated principle of common law, and is therefore either an offence against the State or a wrong against some individual. If a doctor were prosecuted for sterilizing with the woman's consent—and the police would hesitate a long time before such an innovation—a court would have power to declare the common law infringed, but might well take the view that, as Parliament had already had plenty of opportunity to declare the law of offences against the person, the courts should presume that the existing statutes fully stated that law and that judges should not now create new offences in it.

If sterilization with consent is not a criminal offence, the only person who could conceivably be wronged by it is the husband. If he consented he would have no right of action. Even if he did not, it is highly doubtful whether a court would hold that he had a right to damages. If the medical reasons were sound the court would be most unlikely to say he had the right to refuse consent against the interests of his wife's health. (See also a question and answer headed "Voluntary Sterilization and the Law" in the *Journal* of Nov. 27, 1943, p. 701.)

Calcium *o*-Iodoxybenzoate in Rheumatism

Q.—*Can you give me information about the use of calcium o-iodoxybenzoate in spondylitis and rheumatism of the hip-joints? Has experience shown it to have beneficial results in these conditions, and is there any chance of constitutional upsets apart from gastric disturbances?*

A.—Without fuller details of the case it is hardly possible to reply to this question. What is the age of the patient? Is the condition in an active stage or is it chronic? Is any cause known? From the association of spondylitis with arthritis of the hip, and assuming that the patient is young, it seems likely to be a case of ankylosing spondylitis, in which disease the hip-joints are affected very soon after the spine in most cases. If, on the other hand, the patient is over middle age the condition is probably osteo-arthritis affecting both spine and hip-joints—a disease differing entirely in pathology, aetiology, prognosis, and treatment. In the absence of fuller information it can only be said that in the writer's experience calcium *o*-iodoxybenzoate is useless in ankylosing spondylitis; in other conditions it often relieves pain; and where there is associated fibrositis, as is often the case, some amelioration of symptoms is frequently experienced. The writer has not met with any constitutional disturbance accompanying its use beyond occasional gastric upset.

Discharge Swabs in Diphtheria

Q.—*I understand a few fever hospitals have dispensed with discharge swabs for diphtheria cases. Is there sufficient evidence to show whether this procedure will raise the incidence of diphtheria locally? What is the modern teaching on this question?*

A.—Standards of bacteriological clearance after diphtheria have varied quite widely without affecting return-case rates. Fever hospital administrators tend to resist repeated and meticulous swabbing of convalescent cases, partly for this reason but also because it defeats its own end by prolonging hospitalization and thereby increasing the risk of reinfection, particularly under open-ward conditions. This question of avoiding ward cross-infections should never be dissociated from the problem of the convalescent diphtheria carrier. Given adequate protection of the child from this point of view, and assuming the presence of healthy mucous membranes, a commonly accepted standard of bacteriological clearance is two swabs taken at an interval of a few days. Because it gives a more clear-cut picture, tellurite medium is for this purpose usually preferred to Loeffler's.

Penicillin in Meningitis

Q.—*What is the consensus as to the merits of intrathecal penicillin in meningitis (i.e., pneumococcal)? Hoyne of Chicago and Abel and Firor of Johns Hopkins say that intrathecal treatment is unphysiological. Is this true? Rosenberg and Sylvester ("Science," Aug. 11, 1944, p. 132) state that intravenous or intramuscular injection of 20,000 to 40,000 units of penicillin yields a cerebrospinal fluid concentration of 0.03 to 0.05 unit per c.cm. in 60 to 140 minutes, and that this is an adequate concentration to control meningitis. Is this true? Is the pleocytosis caused by intrathecal penicillin important?*

A.—There is abundant evidence that in order to maintain an adequate concentration of penicillin in the cerebrospinal fluid intrathecal injection is necessary. The amount passing into it after intramuscular or intravenous injection is too small, although there is some evidence that when the meninges are inflamed this increases somewhat. A concentration of 0.03 to 0.05 unit per c.cm. is only just enough to inhibit the growth of a sensitive organism; after intrathecal injection ten times this amount may still be present after 24 hours. The questioner is referred to the paper by Cairns and others (*Lancet*, 1944, **1**, 655) for a full account of the rationale, technique, and results of intrathecal penicillin treatment for pneumococcal meningitis.

The meningeal irritation caused by impure penicillin is naturally undesirable, although it is certainly not a contraindication to the treatment if no better penicillin is available. Penicillin of good quality (i.e., of over 500 units per mg.) has not this disadvantage. M. E. Florey and N. G. Heatley (*Lancet*, 1945, **1**, 748) have even suggested that if highly purified penicillin is available a sufficient dose could be given intrathecally to exert a systemic effect for 12 hours, as well as a local one. Patients requiring both forms of treatment could then be left undisturbed at night instead of continuing to receive three-hourly intramuscular injections.

Exertion Urticaria

Q.—*A healthy athletic man of 42 years has suffered since childhood from undue sensitiveness to salt. After bathing in the sea he becomes covered in small blisters. The same happens when he perspires freely. He eats a normal amount of salt. Is this a common condition? I have advised smearing the skin with an oil preparation.*

A.—Is there any evidence that this patient is sensitive to salt? The condition described here is almost certainly an exposure and exertion urticaria—a rare condition which usually starts about puberty and may persist a variable number of years or for life. It is clearly the result of an idiosyncrasy to some metabolic activities consequent upon exposure and exertion, with alteration in capillary permeability (upon which a good deal of work has been done by physiologists); treatment is not effective. I do not think the application of oil will alter the position.

Allergic Disease in a Family

Q.—*Please advise on the modern approach to treatment of a family of three generations severely affected by "allergic" conditions—e.g., asthma, hay-fever, eczema, and vasomotor rhinitis. Is there a general approach, apart from specific desensitization?*

A.—Investigations such as those of R. S. B. Pearson (*Quart. J. Med.*, 1937, **30**, 165) indicate that protein sensitivity is not infrequently found in subjects with no history of asthma or allergy, and suggest that something else is necessary for the appearance of symptoms. The common observation that allergic manifestations may disappear when a patient is admitted to hospital, even though contact with the allergen is maintained, emphasizes the importance of inhibitory factors in preventing the appearance of these disorders. Many psychologists have suggested that allergic affections are often a familial neurosis, provoked by the example or the anxiety of the

parents. Nevertheless, it is a great deal easier to theorize about allergy than to cure it, and, while there can be no doubt that inhibitory forces exist within the organism which can check the appearance of allergy in an individual who has inherited the tendency, there is no evidence that we can direct these forces in such a way, for example, as to prevent the appearance of infantile eczema in the offspring of allergic parents. It may therefore be most practical in the long run to concentrate on the factor of protein sensitization and try to render the home environment free from the common allergens—dusts and moulds.

Unsightly Bursa

Q.—*Is there any curative treatment for the pads of fat or bursae which appear round the external malleoli of middle-aged women? They are not painful but very unsightly.*

A.—Treatment for this condition can be only by deep massage and elastic bandaging. There is no other satisfactory palliative measure. Curative treatment by plastic operations seems desirable only where the cosmetic result is of particular importance.

Carbachol for Migraine

Q.—*Has carbachol any effect on migraine? If so, what doses should be used?*

A.—Carbachol has been stated to have an effect in migraine by A. K. James in an article in this *Journal* (May 12, 1945, p. 663). He found that a patient to whom he was giving tablets of carbachol orally for a dilated colon suffered much less from attacks of migraine during the course of the treatment. He therefore tried the method in other patients, and has published results in 12. He recommends tablets each containing 0.002 g. (which is 2 mg. or 1/30 grain); two of these tablets are taken at once, and this dose is repeated two or three times a day. The daily dose was mostly 6 mg., but one patient was given 12 mg.

Colloidal Gold (Lange) Reaction

Q.—*Can you explain why it is that in an early case of G.P.I. the cerebrospinal fluid, which is W.R.-positive and gives a marked paretic reaction with Lange's gold test, will, after being kept frozen for three weeks, give a characteristic luetic curve? I have seen this twice recently. Is it common?*

A.—The colloidal gold (Lange) reaction is dependent on the presence of globulins in the cerebrospinal fluid; freezing the fluid in the refrigerator tends to "denature" the globulins and render them less soluble when the fluid is thawed. In the case of a fluid which has been frozen and then thawed this might explain the change in the gold curve. The difficulty could probably be overcome by drying the cerebrospinal fluid in the same way as serum is dried; this process apparently does not denature the globulins.

Miller-Abbott Tube

Q.—*How is the Miller-Abbott tube used and what are the indications for employing it?*

A.—The Miller-Abbott tube is a double-channelled narrow-bore rubber tube which is used for the relief of obstruction of the small bowel. In some cases it also helps to locate the site of obstruction. One channel is larger than the other and is used for sucking out the contents of the stomach and intestine; the smaller channel is used for the purpose of injecting air into a rubber balloon which surrounds the distal end.

The tube should be used only for those cases of obstruction in which one can fairly exclude strangulation of the bowel, for emptying the bowel above the strangled coil will in nowise prevent supervention of gangrene. Its chief use is in cases of obstruction due to kinks and adhesions in which distension actually increases the obstruction, in cases of paralytic ileus, and perhaps in some cases of incomplete obturation—e.g., obstruction by a gall-stone.

The tube can be introduced through the mouth or nose—preferably through the nostril, which has the clearest passage. If necessary the nostril and pharynx may be sprayed with a solution of cocaine to lessen irritation. The tube is moistened and pushed gently through the nostril till it reaches the nasopharynx; the patient is then given a little water to swallow while the tube is pushed on towards the gullet. Thereafter it is carried down to the stomach by the patient's own swallowing efforts. The fact that the tube has reached the stomach may be told either by the length of tube which has been swallowed, by the nature and quantity of fluid which may be aspirated, or by inflating the little balloon and gently drawing the tube back till the balloon is stopped by the cardia. After relieving the distended stomach by aspiration of the contents the patient is told to lie on the right side with a view to encouraging the tube to pass on to the duodenum. This should take place within ten or fifteen minutes. The fact that the tube is within the duodenum can sometimes be ascertained by noting the nature and reaction of the aspirated contents; otherwise by inflating the balloon with about 30 c.cm. of air and noting the rather irregular resistance met with during inflation. When once within the small bowel, the tube with its inflated end is gradually forced along the lumen. From time to time the contents of the bowel are aspirated through the larger channel so that the bowel is emptied of air and fluid as the tube advances. Its rate of advance varies from one to two feet an hour. Ultimately the end of the tube will reach down to the site of obstruction, and the relief of distension may actually cure the condition. In cases of organic stricture the tube will stop on the proximal side of the obstruction, and either may be seen by *x*-ray screening, or a little barium emulsion may be injected through the tube and may serve to demonstrate the obstruction.

The caution must be repeated that the use of the Miller-Abbott tube will not prevent gangrene in a strangled coil of gut; in such cases it may relieve the distension of the bowel above the obstruction and so make the necessary operation more safe.

LETTERS, NOTES, ETC.

Venereology

Mr. L. E. EYRES, M.A., writes from Ampleforth College, York: May a schoolmaster, with some knowledge of Latin and Greek, but none of medicine, intervene in your interesting debate on venereology, and offer the following reflections? The difficulty is enhanced by the fact that "V.D." is a violent euphemism. In itself "venereal" merely means "pertaining to the goddess of Love," and the emotion which a man feels towards the harlot who gives him gonorrhoea is certainly not *love*, or anything like it. In a world where spades were spades V.D. would mean, at worst, nymphomania, or its masculine counterpart. And when V.D. is shortened to "venereal" it becomes doubly euphemistic. The nuisance about euphemisms is that once they become established they deny us the use of the word or phrase in its proper sense. If I say "my mother went home yesterday" there are some tiresome people who will take me to mean that she died yesterday. Nor can I say that I have found a comfortable asylum for Aunt Susan without implying that she is insane. With a small *v* "venus" means beauty, charm, etc. Yet if I call Miss Smith a venereal young woman she will not take it as the compliment that it is, though she will not mind my calling her fiancé a *martial* young man. The expression "V.D." is now firmly established, and, though it is a slander on Aphrodite, pedants must acquiesce in it. But to introduce a *twofold* euphemism and call it simply "venereal" would be regrettable, I think, in a scientific treatise. Aedoeology would be strictly accurate: it is a pity that it is such a hideous word. But is it really any worse than, say, gynaecology or aitiology?

War-blinded Men

From St. Dunstan's (9-11, Park Crescent, W.1) there comes an illustrated pamphlet with an article by Sir Ian Fraser, chairman of the Executive Council, describing the work which that institution, a product of the earlier war, has done during the war just ended. Work for the blinded was first thought of as limited to home handicrafts, but Sir Ian Fraser says that experience has shown that, given proper training, blinded men can operate machines in ordinary factories. St. Dunstan's has placed 120 men of the last war and 45 men of the recent war in munition and aircraft factories all over the country. Fifty St. Dunstaners of the recent war have been trained or are training as masseurs, and 47 as telephone operators, while others are following their older comrades as smallholders, poultry farmers, shopkeepers, and the like. One man has been placed as a labour manager, another as a research engineer, and a third has successfully passed his law examinations. St. Dunstan's has established homes in India and in South Africa, and it is expected that the former will prove to be a pioneer institution in the care of the blind in India. Altogether over 900 blinded Service men and women, victims of the second world war, have passed through St. Dunstan's.

A Missing Doctor

Surg. Lieut.-Cmdr. A. S. PLAYFAIR (Manor House, Bagdale, Whitby, Yorks) writes: I have been asked by the very anxious relatives of the Dutch Dr. J. W. Brinkman if I could help in any way to trace him. He was last heard of as a prisoner in Sandbostel Camp in Germany in April, 1945. Apparently he fell ill with typhus fever just before the liberation, and was afterwards under the care of British Service doctors. In June his name could not be found in the list of those who had died in the camp epidemic. Other arduous attempts to trace him have failed. I should be most grateful if you could publish this, with its request for any doctor who might have some information, however slight, to write to me as soon as possible.

Correction

Dr. D. G. MCINTOSH, referring to the letter on the erythrocyte sedimentation rate (Oct. 27, p. 584), says that owing to an oversight he omitted to add corrections to the list of references cited. The corrected references should read:

Abeles, H., and Pinner, M. (1944). *Amer. Rev. Tuberc.*, **49**, 490.
Clive, F. T. (1943). *Tubercle*, **24**, No. 4, 63.
Edwards, P. W., Penman, A. C., and Blair, L. G. (1945). *Lancet*, **1**, 429
Stiehm, R. H. (1939). *Amer. J. med. Sci.*, **197**, 517.